15 Cents

The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Every Thursday TULSA, OKLAHOMA, MARCH 21, 1929 $6.00 a Year

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WALWORTH

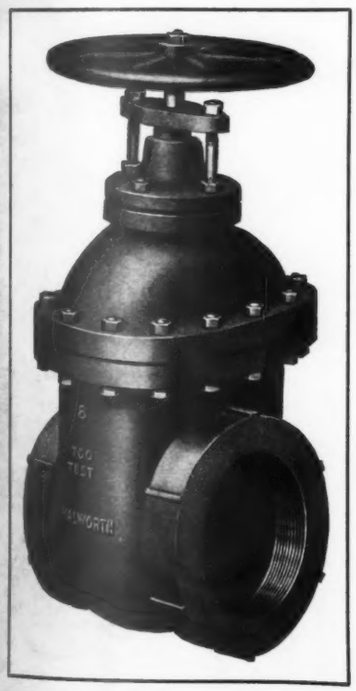
Sets the Standard for Oil Country Valve Equipment

For all pressures and all conditions encountered in the oil country, Walworth's Iron Body Double Disc gate valves set the standard for equipment. The principal jobbers have recognized this by putting large stocks of Walworth valves into their warehouses. Here are some of the leaders of the Walworth line, available in either non-rising stem or outside screw and yoke design—

SEND FOR THE WALWORTH OIL CATALOG

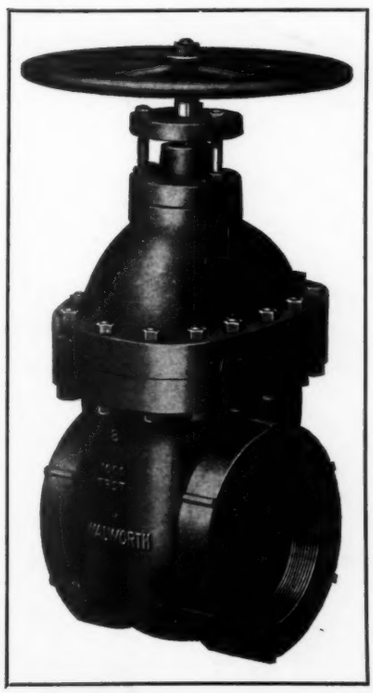
700 lbs. TEST

Walworth 700 lb. Double Disc Steel Iron, Bronze Mounted and Bronze Stem, the accepted equipment for the difficult spots around the well in pump houses and along the pipe line right of way. Recommended for 400 lbs. pressure cold oil, water or gas.



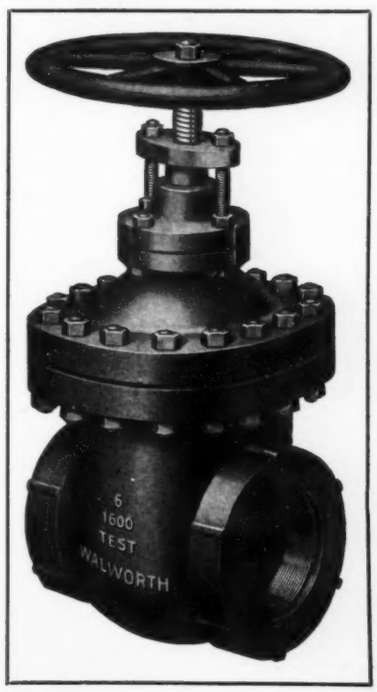
1,000 lbs. TEST

Walworth 1,000 lb. Double Disc Steel Iron Gate Valve, Bronze Mounted and Bronze Stem, a never failing valve for heavy duty. Recommended for 500 lbs. working pressure cold oil, water or gas.



1,600 lbs. TEST

Walworth 1,600 lb. Double Disc Steel Iron Gate Valve, Bronze Mounted and Bronze Stem, for use on the high pressure lines. Recommended for cold oil, water and gas service at 800 lbs. working pressure.



Walworth Company, General Sales Offices: 51 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa., and Attalla, Ala.

Distributors in Principal Cities of the World

Walworth Company, Limited, 10 Cathcart St., Montreal, P. Q.
Walworth International Co., 11 Broadway, New York, Foreign Representative

Advertisers' Index on Page 25 Table of Contents on Page 26

The WORLD IS DEMANDING GREATER and GREATER EFFICIENCY,

The petroleum world is not only demanding greater and greater efficiency but is getting it in Jones H. M. Sucker Rods.

Since that early day in 1893 when Jones made and introduced the first steel sucker rods to replace the old wooden rods then in use, Jones has been steadily forging ahead with progressive improvements culminating in the world famous Jones High Manganese Steel Sucker Rods of today—proved by both field and laboratory tests to be the strongest, longest-lasting rods yet developed.

This high manganese steel, developed after years of constant research, is 10,000 to 40,000 pounds per square inch stronger in tensile strength and 50% to 400% greater in fatigue resistance than the steel ordinarily used in sucker rod manufacture.

That explains one convincing reason why Jones Sucker Rods are in preferred demand all over the petroleum world today—why you too should specify Jones in every sucker rod order.

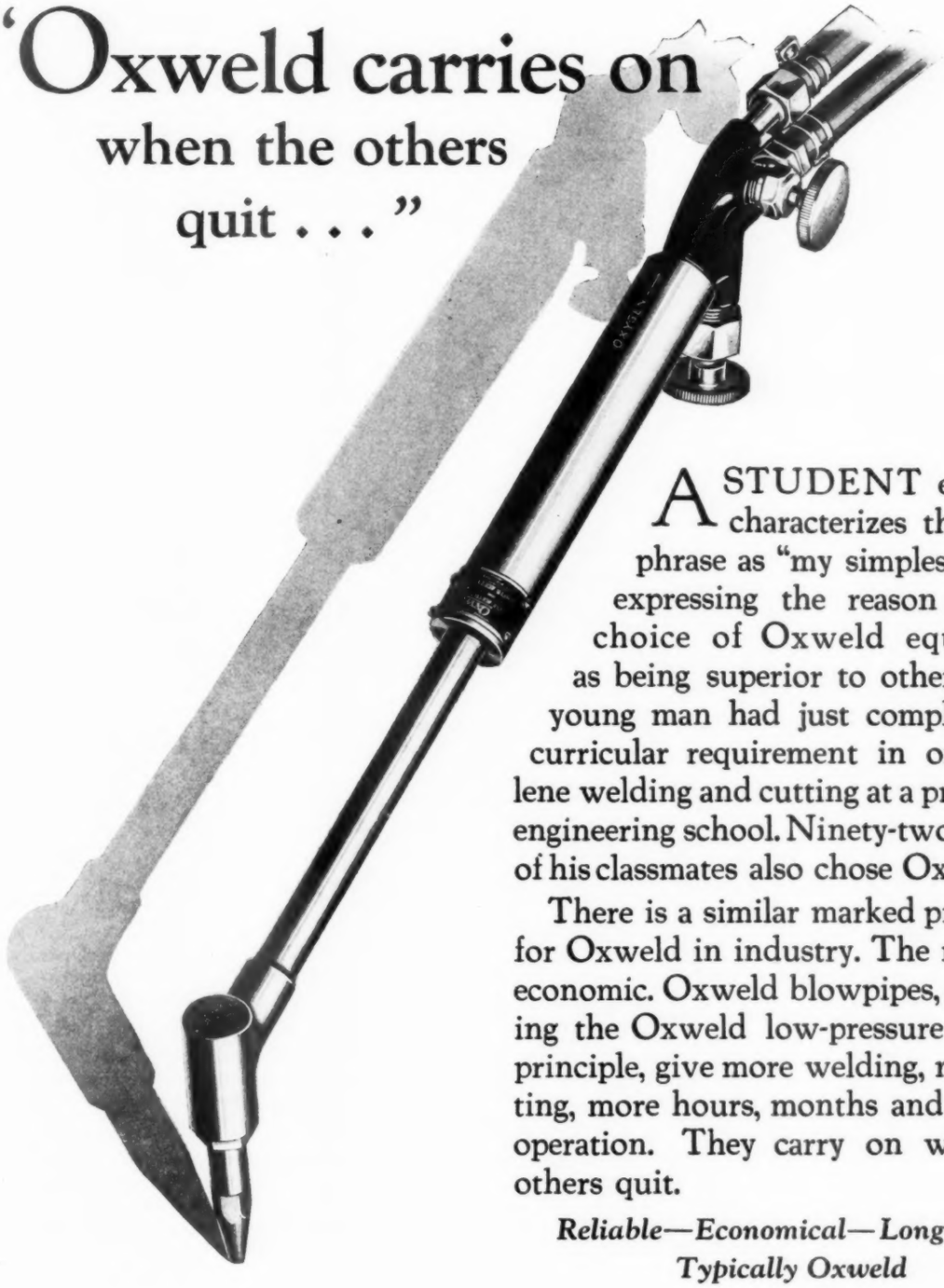
THE S. M. JONES COMPANY
TOLEDO, O., U. S. A.
Mid Continent Office—McBirney Bldg., Tulsa, Okla.

Made to API Specifications

JONES SUCKER RODS

XUM

"Oxweld carries on when the others quit . . ."



A STUDENT engineer characterizes the above phrase as "my simplest way of expressing the reason for my choice of Oxweld equipment as being superior to others." This young man had just completed his curricular requirement in oxy-acetylene welding and cutting at a prominent engineering school. Ninety-two per cent of his classmates also chose Oxweld.

There is a similar marked preference for Oxweld in industry. The reason is economic. Oxweld blowpipes, embodying the Oxweld low-pressure injector principle, give more welding, more cutting, more hours, months and years of operation. They carry on when the others quit.

Reliable—Economical—Long-Lived
Typically Oxweld

OXWELD
WELDING AND CUTTING APPARATUS AND SUPPLIES

OXWELD ACETYLENE COMPANY
Unit of Union Carbide and Carbon Corporation

NEW YORK
Carbide and Carbon Bldg.

UCC

CHICAGO
Peoples Gas Building

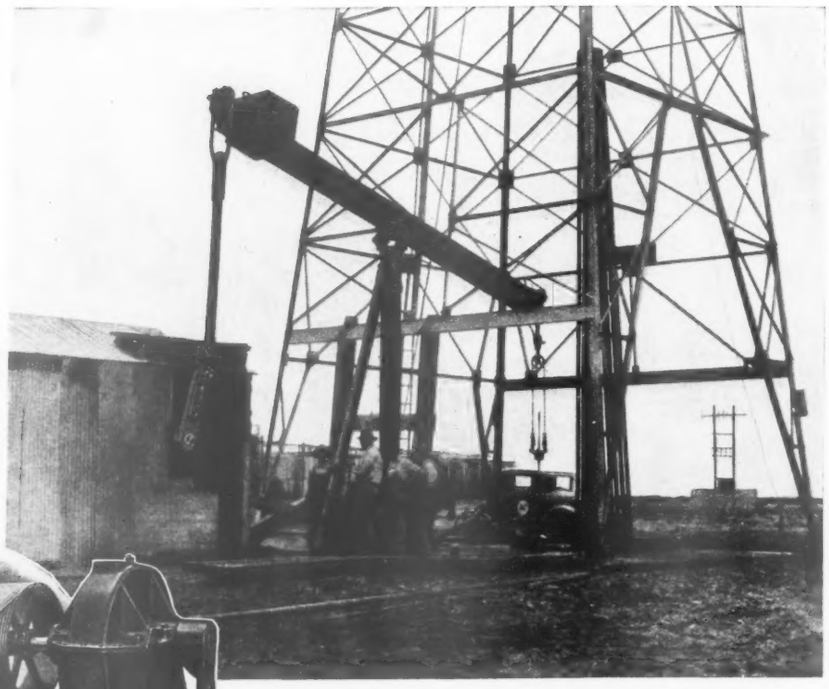
SAN FRANCISCO
Adam Grant Building

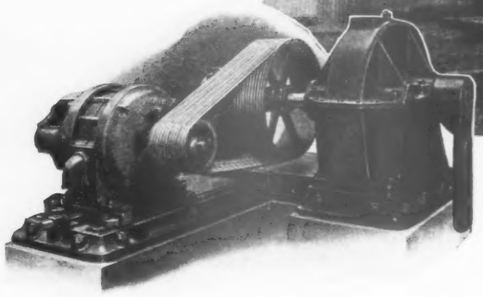
STOCKS IN 38 CITIES

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 per year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Okla., under the Act of March 3, 1879

Advantages of Texrope Drives

—Positive, will not slip
—Flexible and shock absorbing
—No oil or grease required
—Short center operation
—Multiplicity of belts, insuring continuity of operation.





Texrope Units Run Cool— *and are highly efficient*

THIS Allis-Chalmers Texrope Driven Double Reduction Unit operating in Winkler County, Texas, is saving money for the operators of this lease with every stroke of the polish rod. It has a constant full load mechanical efficiency of 97%.

All parts of Texrope Double Reduction Units run cool, with low oil consumption. The gear reduction is of the quiet herringbone type, with the main shaft extended to permit lining up the drive sprocket with the sprocket on the hoist or draw works.

The Texrope Drive is used as the first reduction. Texropes, being elastic, absorb the shock loads without transmitting them to the prime mover. They will not slip and require very little care or adjustment. Texropes are also used on Allis-Chalmers single reduction units, slush pump and pipe line pump drives and on other oil field equipment requiring a highly efficient, flexible, short center drive.

Write your nearest oil field office for detailed information on Allis-Chalmers oil field equipment. Stocks carried at Tulsa, Houston, Sweetwater, and Los Angeles.

Products for the Oil Industry

Single and Double Reduction Units
Texrope Drives
Motors and Control
Drilling-Pumping-Pipeline
Transformers
Centrifugal Pumps
Pipe Line Pumps

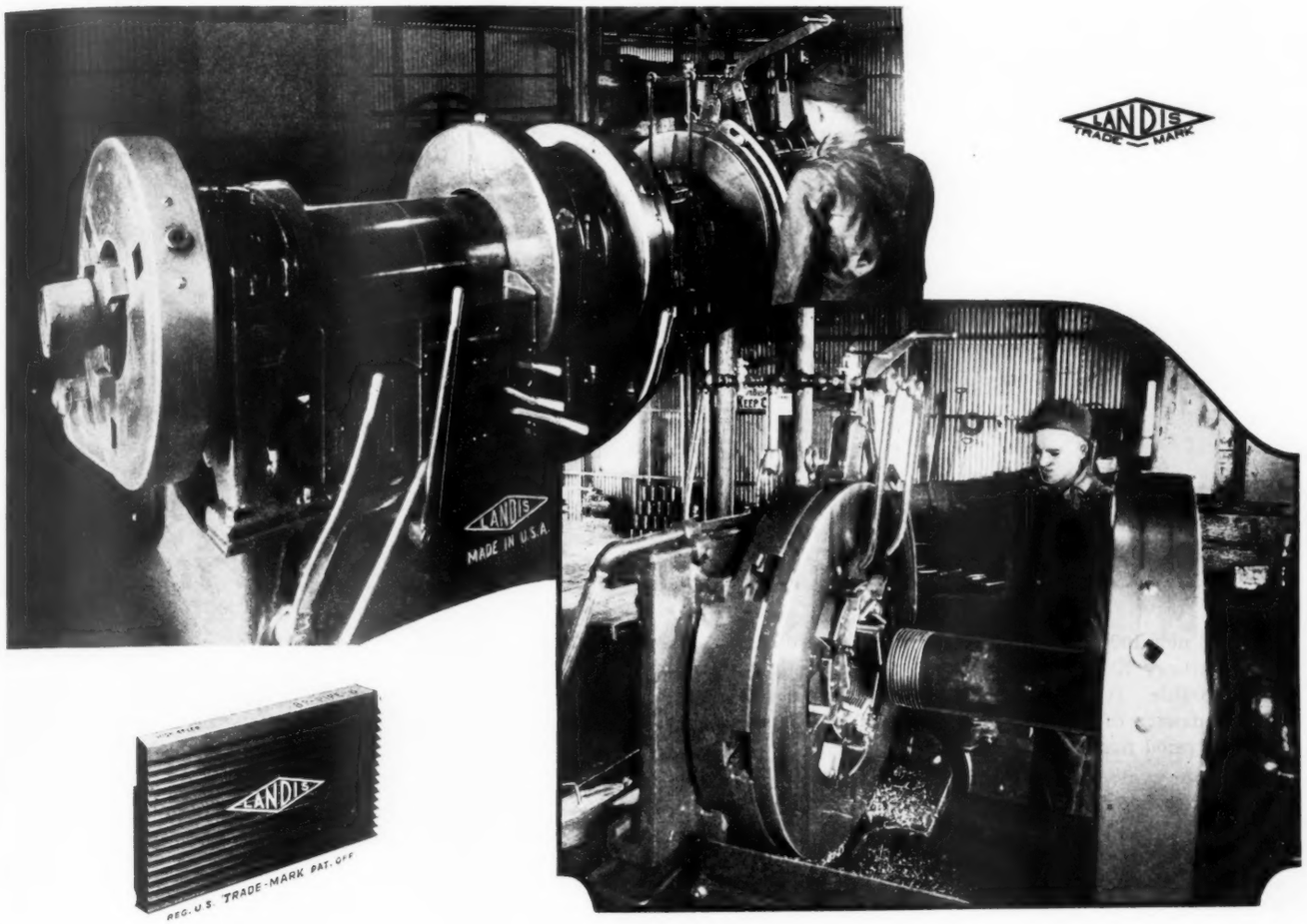
Oil Field Offices

DALLAS
HOUSTON
NEW ORLEANS
KANSAS CITY
DENVER
LOS ANGELES
SAN FRANCISCO

WESTERN SUPPLY CO., Tulsa

ALLIS-CHALMERS
MILWAUKEE, WIS. U. S. A.

The Men Who Know—Choose LANDIS!



The best indication of the value of the Landis Pipe Threading and Cutting Machine is that it is the choice of the men who know.

The men who know the value of cleanly cut, correctly tapered threads—the men who must turn out the production—and the men who foot the bills—all choose Landis.

It is obvious that the Landis is built to produce better threads, to give a higher production and to operate at a lower maintenance cost.

To know—is to act.

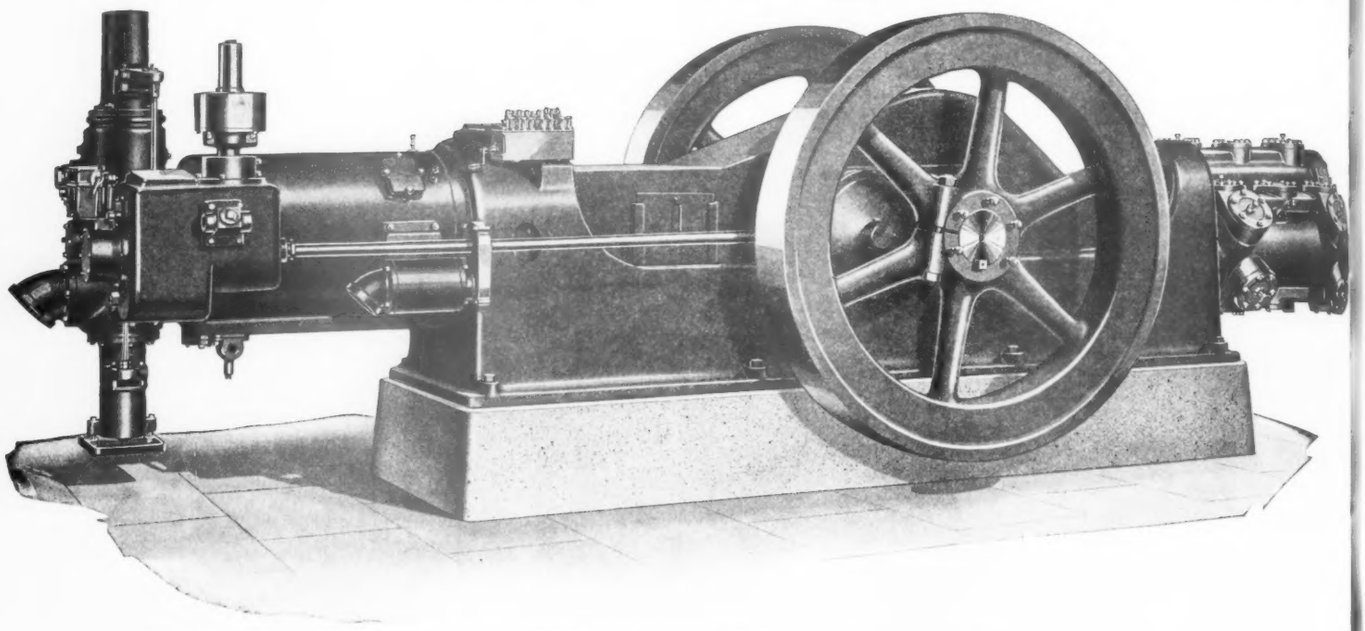
Write today for Catalogue No. 31—"Landis Pipe Threading Machinery"

LANDIS MACHINE COMPANY, Inc.

Waynesboro, Penna., U. S. A.

REPRESENTED IN THE DOMESTIC OIL FIELDS BY: Colcord-Wright Machinery & Supply Co., St. Louis, Mo.; D. S. Mair Machinery Co., Houston, Tex.; Woodward, Wight & Co., New Orleans, La.; Herberts Machinery & Supply Co., Los Angeles; Herberts Moore Machinery Co., San Francisco, Calif.; Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.

New Pattin Super Powe



Now Fitted With Timken Bearings

THIS new 100 H.P. Direct Driven Compressor carries an Auxiliary Exhaust Valve that practically eliminates all valve trouble. It embodies features that stamp it as a unit far in advance of any heretofore offered, and it will carry the full rated horse power load.

It is a four cycle, single acting, center crank type, fully enclosed, with two fly wheels and has the following features—

Auxiliary Exhaust Valve

The main feature of our new engine is an Auxiliary Exhaust Port Sleeve Valve, (Patent applied for). It eliminates valve trouble. As practically all fire is taken out of cylinder through the center of this sleeve valve, and does not come in contact with the finished surface of the main valves, the greatest wear is eliminated. After exhaust takes place, this valve closes, and prevents loss of incoming charge or fouling by exhaust gases. No fire goes through the main valves.

Assembly of Compressor Cylinders

Each cylinder is independent of the other. The pistons or valves can be removed without changing a single pipe connection or affecting the alignment in any way.

This 100 H.P. Direct Driven Compressor is self contained—one foundation, and has no outboard bearing or supports of any kind to get out of line and cause trouble.

It has high speed governor, gear driven, enclosed; Timken Bearings, completely enclosed combination splash and force feed lubrication, and automatic air starter.

A special feature has been built into this unit, which permits it to operate on very lean air gas.

It is destined to be the sensation of 1929—write today for literature on this Super Power Unit.

Suitable for Gas Booster work—any pressure from 50 to 400 pounds.

Equipped With MEISTER VALVES

Meister Valves are made of vanadium steel and weigh less than two ounces each. On account of their lightness they are absolutely noiseless and will never require grinding.

Seats are made separate from cylinder and are readily accessible for cleaning or repairing without removing a single connection. As they are free from troublesome springs, they can be used in any position. Here are some features of Meister Valves.

1—Improved mechanical and volumetric efficiency over the old style poppet valve.
2—Elimination of lubrication of any kind for the valve itself.
3—Silent operation at the highest piston speeds.
4—Valves never require regrinding.
5—Elimination of troublesome springs.
6—Simplification of air end, owing to the absence of all complicated valve operating mechanism.

Write for prices, or inquire of any of our representatives.

ASK FOR CIRCULAR NO. 32

THE PATTIN BROTHERS COMPANY

MARIETTA, OHIO

Tulsa, Okla. A. S. Dunnington
Coleman, Tex. J. Barnes
Wichita Falls, Tex. J. W. Noland
Putnam, Tex. Putnam Supply Co.
Bradford, Pa. Blaisdell Machinery Co.

PATTIN PRODUCTS

Gas Engines
Pumping Powers
Water Pumps
Air and Gas Compressors
Vacuum Pumps
Oil Country Boilers
Torpedo Reels and Clamps
Steel Storage Tanks
High Pressure Tanks
Howe Casing Heads
Shackle Irons

THE PATTIN BROS. CO.

The Shovel They Like Best Costs Less to Use

TO the buyer away from the shoveling line, there may not be much difference in shovels except the price. But a "Moly" shovel is as different in the hands of a workman, as a well balanced golf club is to a "pro".

"Moly" shovels are built with a light easy balance—the "hang" that comes as natural to a shoveler as spitting on his hands. The handle is easy on his fist—the wide comfortable "Moly-D" grip prevents knuckle squeezing. There are no rough corners to form callouses on thumbs.

On digging shovels there is a broad turn to the top edge of the blade—a patented step that gives the foot a purchase and that saves feet and saves shoes.

Easier to work with, the "Moly" saves money because it gets more work done.

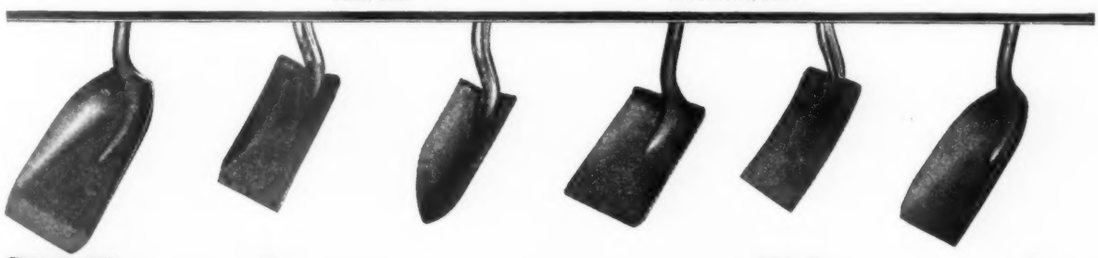
In addition, "Moly" blades are made of Mo-*lyb*-den-um steel, the longest wearing steel used in shovel manufacture. It's tough, hard, and lighter than any other blade of equal strength.

Send us your shovel requirements—we'll show you a "Moly" to fit the job.

THE WOOD SHOVEL & TOOL COMPANY · *Piqua, Ohio*

Distributors:

FRICK & LINDSAY COMPANY, *Pittsburgh, Pa.*
MIDEKE SUPPLY COMPANY, *Oklahoma City, Okla.*
FRICK-REID SUPPLY COMPANY, *Tulsa, Okla.*
ALAMA IRON WORKS, *San Antonio, Texas*



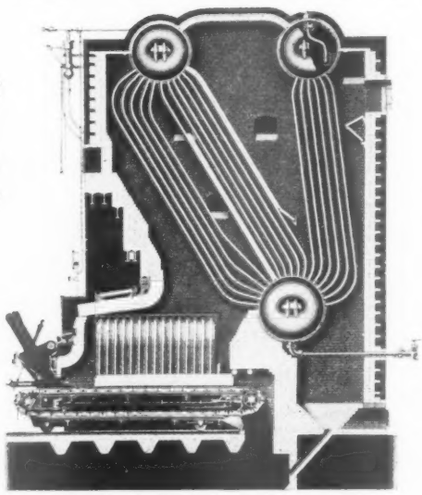
Wood's Mo-lyb-den-um Shovels

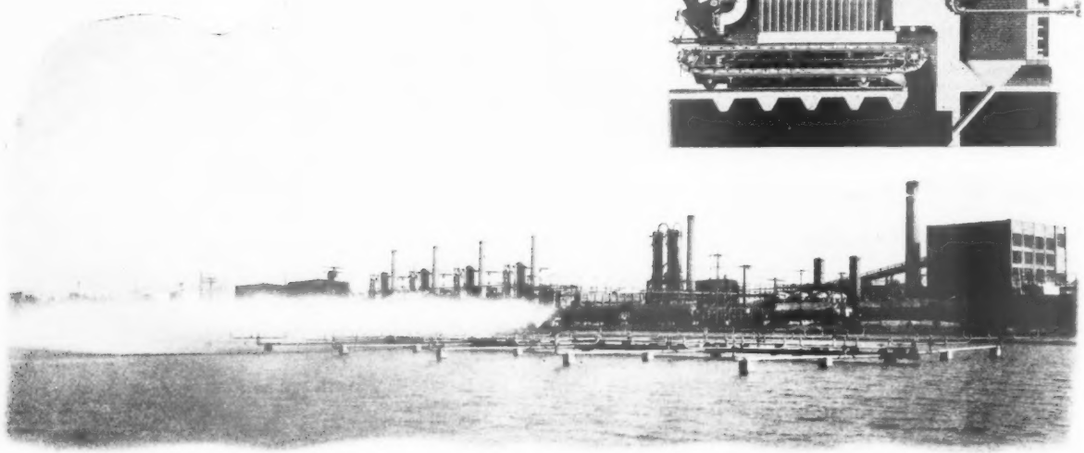
The American Super Steel

A SHOVEL FOR EVERY INDUSTRY—DISTRIBUTED IN EVERY CITY

Vogt *Water Tube* Boilers

In MODEL POWER PLANT *of* LINCOLN OIL REFINING CO. ROBINSON, ILL.





OPERATING at 250% rating, three Vogt 526 horse power curved tube boilers are economically and efficiently producing steam at this well known refinery. These boilers are equipped with water cooled walls, radiant heat superheaters, air preheaters, and both forced and induced draft fans. Pressure regulators and recording flow meters automatically control performance under all operating conditions.

HENRY VOGT MACHINE CO.
(Incorporated)
LOUISVILLE, KY.

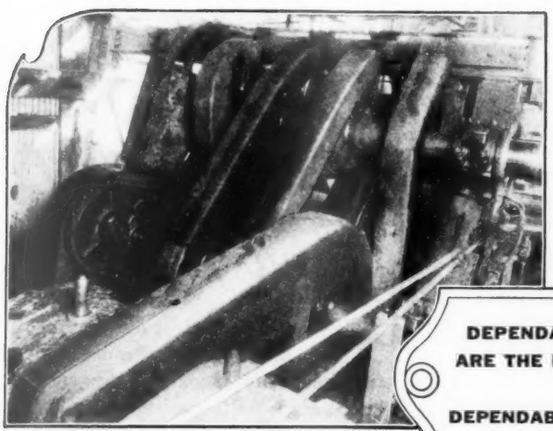
Branch Offices: New York Chicago Philadelphia Cleveland Dallas

Manufacturers of: OIL REFINERY EQUIPMENT, DROP FORGED STEEL VALVES AND FITTINGS, WATER TUBE AND HORIZONTAL RETURN TUBULAR BOILERS, ICE MAKING AND REFRIGERATING MACHINERY.

6000
FEET DOWN

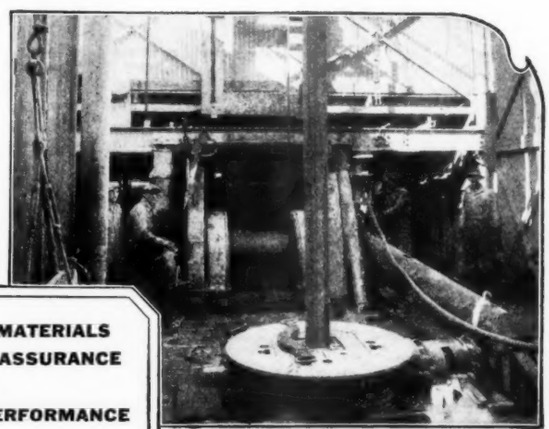
EMSCO ROTARY DRAW WORKS

depend upon Nickel Alloy Steel Forgings to support the weight of more than a mile of pipe and drilling gear



Emsco Rotary Draw Works in operation over well in Signal Hill oil fields. Line, jack and drum shafts are Nickel Chromium Steel.

DEPENDABLE MATERIALS ARE THE BEST ASSURANCE OF DEPENDABLE PERFORMANCE



Emsco Rotary Draw Works mfd. by EMSCO DERRICK & EQUIPMENT CO., Los Angeles, Cal., showing hook-up on well.

IN the drilling campaign now under way in the Signal Hill Fields near Los Angeles, only the most rugged types of equipment are adequate for the job. Due to its advanced design and the use of Nickel Alloy Steel parts, the Emsco Rotary Draw Works is able to handle drilling tools under the unusually heavy duty of drilling at great depths.

It is significant to note that for the parts in the Emsco Draw Works where the greatest stresses come, Nickel Chromium Steel forgings are used. These Nickel Alloy Steel forgings include the jack shafts, line shafts and drum shafts.

The widespread use of Nickel Alloy Steels by leading manufacturers of drilling equipment is conclusive proof of the dependable mechanical properties of these steels. An extensive fund of valuable technical data has been collected from the experience of well-known users. You are invited to consult our engineers and to draw upon this information at any time.

Nickel
FOR ALLOY STEEL

SEND FOR "BUYERS' GUIDE TO NICKEL ALLOY STEEL PRODUCTS"

You are invited to visit our booth at The Chicago Convention and Exhibit of The American Foundrymen's Association, Hotel Stevens, Chicago, April 8th to 11th, Space No. 118.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

IRON-METERS-CASE

A Mighty and Successful METER

The three sizes of Ironcase Metric Meters (80-B, 250-B and 500-B) which were built to give improved service over their predecessors (60-B, 100-B and 200-B) have now been proved by five years of hard service to be every bit as good as promised.

In building these modern Ironcase Meters the dominating motive was to secure an increase in capacity and a decrease in weight. This was accomplished by changing the shape and size of the case.

Otherwise the improved Ironcase sizes retain all the fine features of the older types which had given satisfactory service for 12 years prior to the advent of the modern Ironcase. Additional important refinements, however, were introduced: *Alemite (non-stop) lubrication; Timken Bearings; Longer Valve Links; Light Weight Valve Covers; Greater Resistance to Valve Wear; Diaphragm Drains, and Corrosion Proof Cases.*

These features, plus added capacity and decreased weight, give the meters longer life in service and much better operating qualities. If today's Ironcase is an experiment, it is a mighty successful experiment that every user of these wonder measuring instruments will profit by.

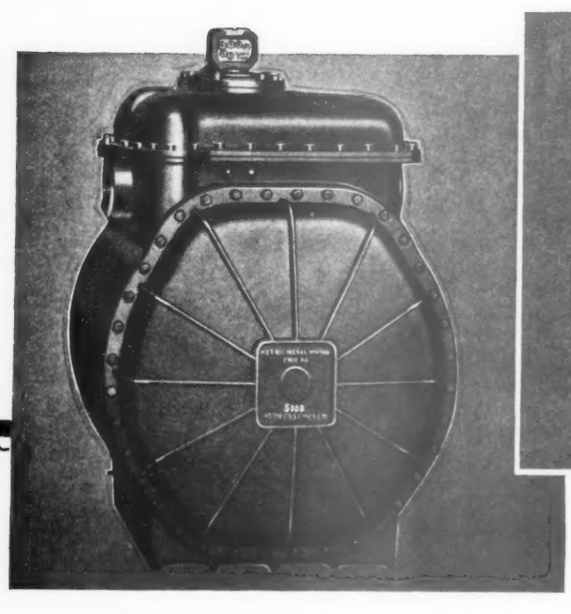
CELEBRATES *it's 5th birthday by getting a brand new feature*

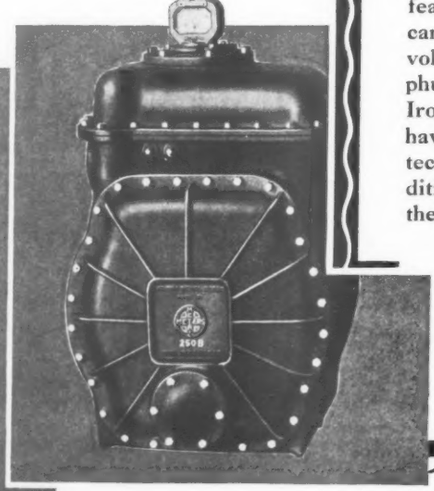
Every other feature having proved its ability and high merit for Ironcase Service, there is only one improvement we can contribute to these modern meters at the close of their 5th year. This new feature is a *special Metric formula varnish* that is applied to the interior of all castings to prevent corrosion.

After extensive proof we know that corrosion is conquered by this coating insofar as it could affect Ironcase accuracy.

The desirability of this new feature is of greatest significance where measurement involves handling gas with sulphur content. However, all Ironcase Meter cases will have this anticorrosion protection without regard to conditions of service for which they are intended.

METRIC METAL WORKS
of the American Meter Company-Inc.
- ERIE - PENNSYLVANIA - U-S-A -





At left is the 500-B Ironcase, above is the 250-B Ironcase—both in their actual relative proportions as to size. Decrease in size and increase in capacity is a remarkable feature of the newer Ironcase.

There are more Wilson Elevators in service than any other make ››› in many fields almost 100% of the wells are *Wilson* equipped

First in
Safety
Speed
Strength
Convenience

Wilson
double extra heavy
side-door
Speed
Elevator

IT'S A WILSON

Succeeding WILSON & WILLARD MFG. CO.
WILSON OIL TOOLS CORP.
OIL TOOLS DIVISION
of
Byron Jackson Pump Co.
2301 E. Vernon Avenue, Los Angeles, California

Factory Representatives:
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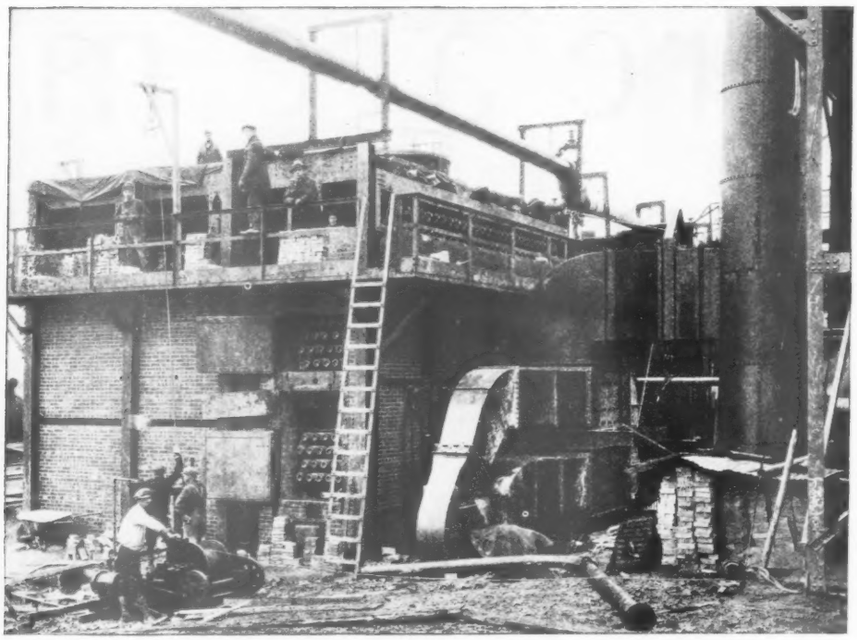
Houston, Texas, 2201 Breckenridge St.
Fort Worth, Texas, 814 Dan Waggoner Bldg.
New York, N. Y., 1245 Graybar Bldg.



Tube Still for Vacuum Distillation

Several important features of a Foster tube still used in vacuum distillation are shown by the above photograph. The furnace roof is composed of heating tubes—both ends of which are accessible from the balcony. Access to the tubes of the main heating bank and to the superheater elements is provided by doors at the sides of the still.

The temperature of stack gases is reduced by passing through the Foster air heater between the still and the stack. The air heater contains 3,150 sq. ft. of heating surface and preheats the air for combustion in the still.

This Foster tube still is so designed that fuel oil can be burned with less than 25 per cent excess air in the furnace, when operating at specified capacity, without excessive temperature.

FOSTER WHEELER CORPORATION
165 Broadway, New York, N. Y.
Branches in Principal Oil Centers

Foreign Associates:
Foster Wheeler Limited, London, England.
Foster Wheeler Limited, Toronto-Montreal-Vancouver, Canada.

FOSTER WHEELER

Stelliting is

GOOD MANAGEMENT

ALL friction develops heat—heat sufficient to soften the best steels and reduce their resistance to abrasive wear.

The characteristic resistance of surfaces coated with Haynes Stellite to all abrasive wear and especially where high temperatures are involved saves money and stabilizes production all along the line. With three to five times longer life demonstrated, the Stelliting of wearing parts has been widely adopted as a matter of real economy.

Throughout industry Haynes Stellite is solving problems which come from a continually narrowing margin of profit. It reduces maintenance costs and idle equipment time. It saves repair bills—lowers inventories of replacement parts—releases capital for profitable employment—and does much toward keeping production on an even keel.

Your regular welders can do Stelliting. Haynes Stellite representatives will show them how.

Ask for booklets describing the process.

Stelliting with

HAYNES STELLITE

HAYNES STELLITE COMPANY

Unit of Union Carbide and Carbon Corporation

UCC

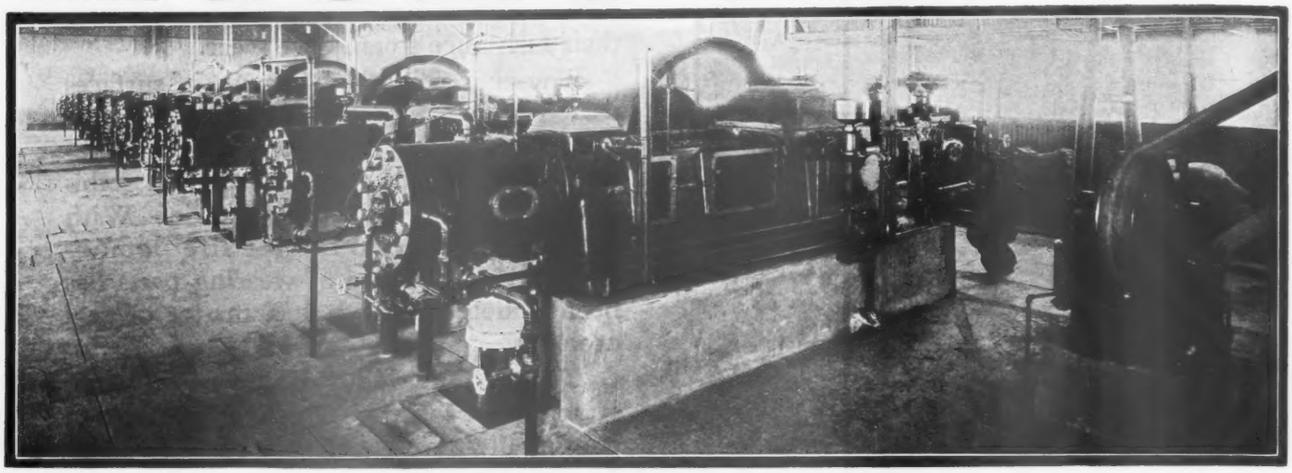
DISTRICT SALES OFFICES

Chicago—1949 Peoples Gas Building
Cleveland—628 Keith Building
Detroit—4-240 General Motors Building
Houston—6119 Harrisburg Building
Los Angeles—1310 Santee Street
New York—30 East 42nd Street
San Francisco—114 Sansome Street
Tulsa—Exchange National Bank Building

General Offices—Kokomo, Indiana

Haynes Stellite welding rod is also available from any of the 28 District Sales Offices of Oxweld Acetylene Company

1949
1939
1929



A Battery of Bessemer Type Ten Compressors in The Magnolia Petroleum Co's Gasoline Plant at Pampa, Tex.

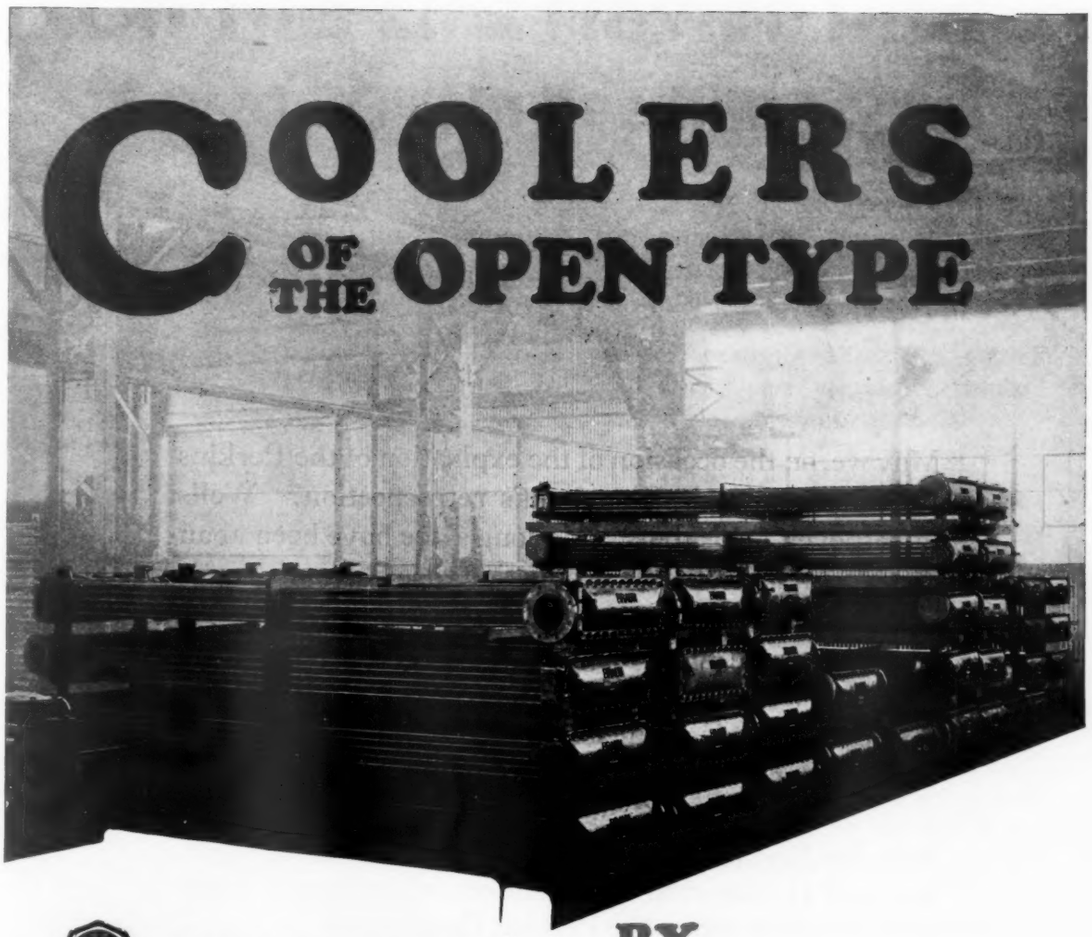
ON AND ON through the years you will find your Bessemers rendering that stellar service which has marked Bessemer performance for three decades.

The Bessemer you buy in 1929 will still be young in 1939 and in all probability will be a steady worker in 1949—and after! A Bessemer remains impervious to the ravages of time and service during their decades of unfaltering performance. Years of running time are built into every part, so that servicing and replacement are held at the minimum.

When you buy your next Oil Field Power Equipment investigate the running records of Bessemers. Their consistent 99%+ running time and their decades of on-the-job performance offer the most convincing proof of Bessemers' serviceability and investment economy.

BESSEMER ENGINE COMPANY
76 York Street -:- Grove City, Pa.

BESSEMER



BRAUN open cooler design adheres to the same high standards found in BRAUN heat exchangers, to-wit:

BY BRAUN

[a] Removable channel cover plates permit accessibility to inside of tubes for inspection or cleaning WITHOUT BREAKING PIPE CONNECTIONS.

[b] Tubes scientifically arranged so that possible channeling of water around surface is eliminated.

[c] Nozzles permit simplicity of piping and by-passing.

BRAUN open coolers fit standard BRAUN cooling towers thereby eliminating necessity of large and expensive concrete basins.

C·F·BRAUN & CO.

Manufacturing Mechanical Engineers

ALHAMBRA, CALIFORNIA

TULSA Kennedy Bldg. **DALLAS** Republic Bank Bldg. **HOUSTON** Neils Esperson Bldg. **CHICAGO** Engineering Bldg. **NEW YORK** 120 Broadway

May we, on the occasion of the expiration of the Perkins' Patents, indulge in a moment's retrospection? Wells, farms, even fields that would long since have been abandoned, still in profitable production; gas blowouts apparently too "wild" to be controlled quickly brought under subjection; 40,000 wells given the protection of an impervious, water-tight and permanent jacket of cement—the best known insurance that foreign fluids will be kept *out* and the all-important fluid kept *in*.

Yes, the Perkins' Process meant much to the oil industry; and Halliburton organization, initiative and enterprise meant much to the Perkins Process.

HALLIBURTON OIL WELL CEMENTING CO.
Duncan, Oklahoma

On This Line Naylor Pipe
Saved 30% In Erecting Costs

ON the pipe line illustrated at the left Naylor Pipe cost 30% less to erect than standard weight wrought pipe.

Naylor Pipe weighs half as much as standard weight pipe yet carries standard weight pipe pressures.

This economy alone justifies its use.

But as years roll along another economy will develop.

Naylor Pipe is made of corrosion-resisting Toncan Iron. The resulting protection reduces pipe renewal due to pitting and corrosion.

Not only do you save in erecting costs by using Naylor Pipe, but as added measure comes the longer life due to the Toncan Iron resistance to corrosion.

Naylor Pipe Company

Main Office and Plant, 1230 East 92nd Street, Chicago

Sales Offices:

New York, 25 Church Street
Cleveland, 1367 East 6th Street
Philadelphia, Witherspoon Bldg.
Detroit, 1500 Cadillac Sq. Bldg.
Tulsa, 507 Philtower Bldg.

Ducommun Corporation

Los Angeles San Francisco

Exclusive Distributors: California, Arizona, Nevada and Utah

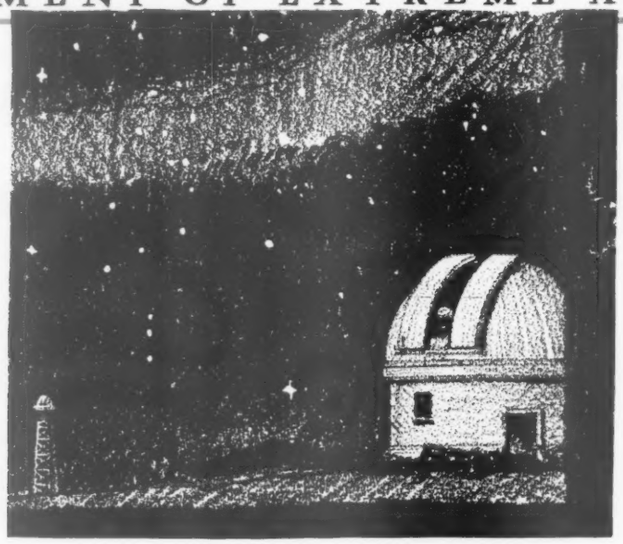
Montreal, Canada—Mechanical Equipment Company, New Birks Building

TONCAN
Naylor Pipe
Mo-lyb-den-um
IRON

Standardized Naylor Pipe is made in sizes 6" to 12" in standard 20 ft. lengths or special lengths up to 40 ft. Made with five types of pipe ends to wrought pipe standards for five types of joints.

Toncan Copper Molybdenum Iron is a development of Central Alloy Steel Corporation, the world's largest and most highly specialized alloy steel producers. It possesses a superior corrosion-resistance, making it the favored pipe material

FOR THE ATTAINMENT OF EXTREME ACCURACY



Even astronomy enters the making of Axelson Sucker Rods

Fifteen years ago tolerances that varied within 1/100 inch were "good enough" in sucker rod manufacture.

But it didn't satisfy Axelson.

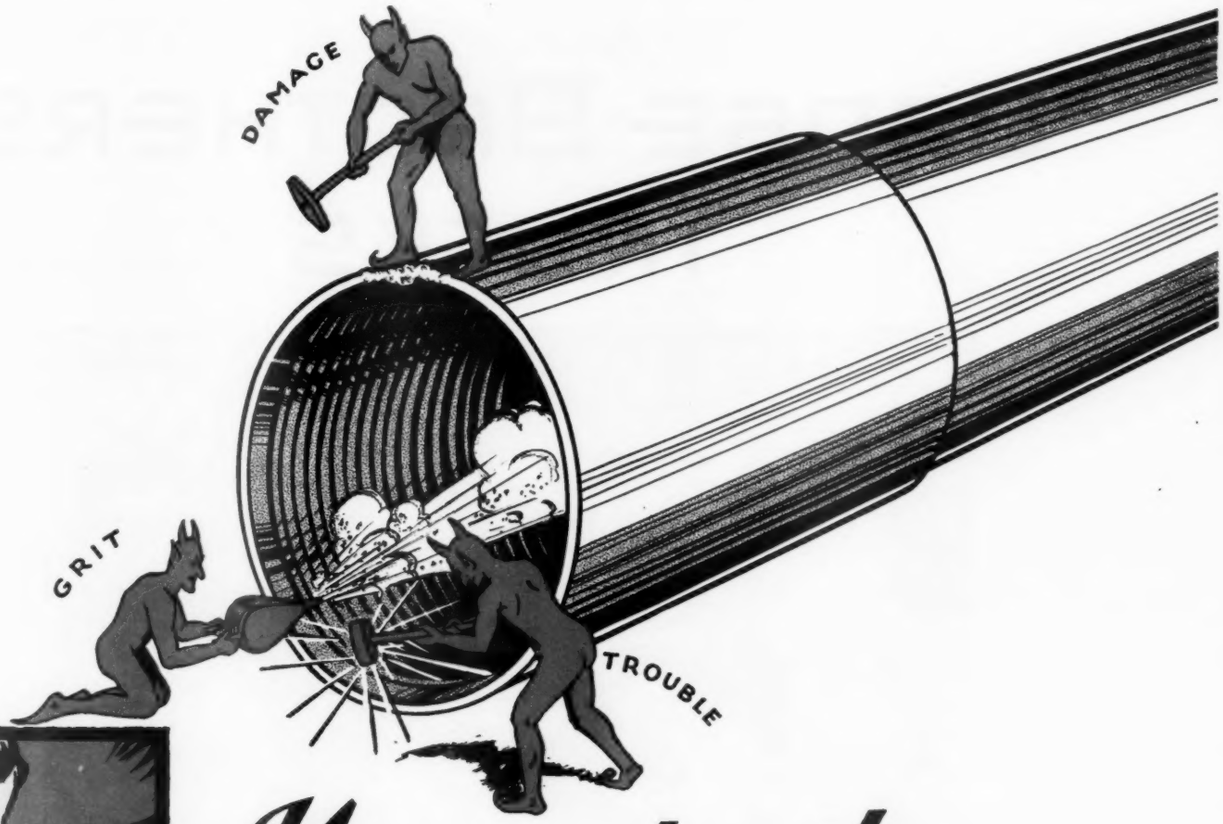
Constant effort is exerted to attain greater accuracy.

Gage making developed into an art in the Axelson plant. The world was searched for the most accurate standards of gaging. Axelson brought from Europe the first set of Johansson Gages ever used on the Pacific Coast. Axelson working gages are constantly checked with master gages, which in turn are checked with Johansson Blocks which verify measurements to 1/100,000 inch; these master gage blocks are periodically checked by the interferometer under the direction of astronomers, utilizing light rays which verify measurement to 1/1,000,000 of an inch.

The ability of Axelson to produce working gages of surpassing accuracy means greater precision in the manufacture of Axelson Oil Well Pumps and Sucker Rods.

Axelson Machine Company
P. O. Box 337
Los Angeles, California
Tulsa, St. Louis, New York City
Mid-Continent and Eastern Distributors:
Frick-Reid Supply Corporation

AXELSON
Oil Well Pumps & Sucker Rods



No wonder they can't be used!

Pulled through dirt and sand— clogged with grease —dropped on concrete sidings— and the user must pay for rethreading, for cleaning—for delays.

There is no excuse today for damaged threads in pipe or coupling —Colona Thread Protectors securely protect the threads and keep out all grit and dirt—the pipe comes to you just as it left the mill—ready to put down.

Insist on Colona Protection—it is insurance against trouble and costly delays.

Colona Manufacturing Co.

PITTSBURGH, PA.

COLONA

PATENTED

PIPE THREAD PROTECTORS

DODGE BROTHERS TRUCKS

CHRYSLER MOTORS PRODUCT

For power and speed, low costs and high earnings . . . Dodge Trucks

YOU find Dodge Trucks at work everywhere in the oil business—delivering petroleum products on city streets and doing the hundred and one tasks called for in the producing fields . . . . . They are fast, powerful, rugged and dependable.

Operating costs are extremely low; service and repair parts readily accessible—always and everywhere—bodies and chassis built in types and sizes to fit every requirement of the industry.

Only great volume production enables us to build trucks so good at prices so low . . . . . Shrewd, alert purchasers buy more than a million dollars' worth every week.

Inspect the complete line at your Dodge Brothers Dealer's . . . . . Put one of these tested money-makers to work for you.

Formerly Graham Brothers Trucks

The complete line of Trucks, Buses and Motor Coaches which Dodge Brothers have been manufacturing and selling under the name of Graham Brothers now take the name of their makers—Dodge Brothers.

These Trucks, Buses and Motor Coaches have always been powered by Dodge Brothers engines. For years they have been built of Dodge Brothers parts in Dodge Brothers plants according to Dodge Brothers standards.

These Trucks, Buses and Motor Coaches are sold, as they always have been sold, by Dodge Brothers Dealers everywhere.

PRICES

MERCHANTS EXPRESS—110" w. b.	$ 665
COMMERCIAL TRUCK—120" w. b.	775
1-TON—130" wheelbase	995
1-TON—140" wheelbase	1065
1½-TON—150" wheelbase	1345
1½-TON—165" wheelbase	1415
2-TON—150" wheelbase	1515
2-TON—165" wheelbase	1585
3-TON—135" wheelbase	1745
3-TON—165" wheelbase	1775
3-TON—185" wheelbase	1845

Chassis f. o. b. Detroit

SOLD BY DODGE BROTHERS DEALERS EVERYWHERE

Hauling to Schedule

68 joints of 8-inch casing—33 tons in all! The "Caterpillar" Tractor will deliver it on time. For the "Caterpillar" has no fear of mud nor sand nor dust. It has the power for the stiff pull up a grade. It does not balk in cold weather nor sulk in hot. A dependable engine, built for heavy-duty tractor needs, delivers uninterrupted service. Wide tracks grip the road and travel it without harmful cutting. Most hauling jobs in the oil field need a "Caterpillar"—all of them deserve it!

Caterpillar Tractor Co.

EXECUTIVE OFFICES: SAN LEANDRO, CALIFORNIA

Sales Offices: Peoria, Illinois • 50 Church St., New York • San Leandro, Calif.

Holt Combined Harvesters • Russell Road Machinery

"Caterpillar" Tractors

CATERPILLAR

REG. U.S. PAT. OFF.

TRACTOR

Greater Efficiency

The New Type Swan

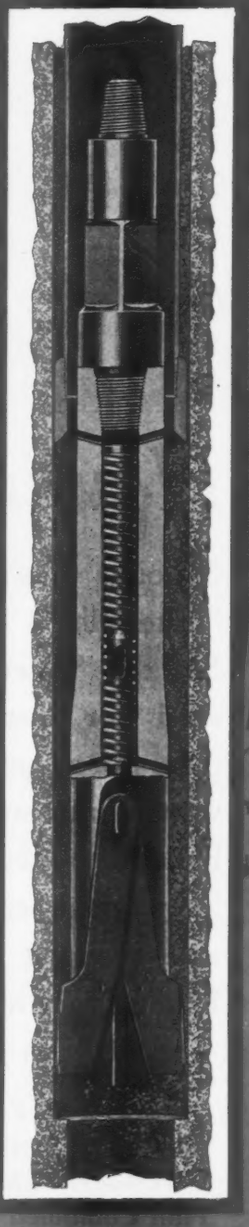
Deeper holes — heavier pipe — these two have been responsible for the development of new problems in the oil fields.

In the New Type Swan, we have developed an Underreamer that has proved itself the master of any job it encounters—no matter how hard. It has never yet failed to meet any test made on it.

You can secure the New Type Swan from any Bridgeport branch store or distributor. Rent it—if your need be only temporary;—or buy it if you prefer.

If you are not fully acquainted with all the features of this exceptional underreamer, write us for illustrated booklet.

THE BRIDGEPORT MACHINE COMPANY
GENERAL OFFICES AND FACTORY
WICHITA, KANSAS
"Branches throughout the Oil Fields"



Complete stocks of the Regular Swan Underreamer are carried in all of our branches, either for rental or sale. Full information will be gladly furnished by our branches or distributors, or upon inquiry to the Home Office, regarding this tool and its uses.

BORIUM *Cuts..like a Keen Saw*

OIL WELL drillers need a bit that ***cuts!***... that ***goes through!***... regardless of the formation... and nothing yet has been found so economically efficient as BORIUM.

Both abrasive-resisting metals and cutting materials have their use... and neither can supplant the other.

THE STOODY COMPANY manufactures the outstanding, ***proven*** leaders in both fields... Borium and Stoodite ...and, in oil-well drilling, recommends their ***companionate*** use.

Just as a saw is superior to the ***hardest*** of smooth steel, so is BORIUM superior to any hard-facing metal for cutting... for ***going through***... regardless!

In fact, ***nothing***, other than diamonds, ***can*** do the work of BORIUM.

STOODY COMPANY

Manufacturers of **WELDING ROD • ALLOY STEELS • EQUIPMENT**
WHITTIER, CALIFORNIA

When you see Steel Pipe *marked*

The name BETHLEHEM is marked at intervals on every length of Bethlehem Steel Pipe—assurance that Bethlehem Pipe embodies the same high quality found in other Bethlehem Products.

..you know this about it

You can be sure of certain very important things about Bethlehem Steel Pipe. You can be sure that it was made by the most approved methods under the supervision of experienced men, in a mill equipped with the most modern machinery. And you can be sure that it has passed the most critical inspection and tests, and that it conforms in every detail to Bethlehem standards.

Most important of all, you know that it is placed on the market by a Company with a half-century old reputation for quality in a wide range of steel products, and a standard of excellence that is never relaxed.

Users and jobbers of pipe can buy steel pipe marked "Bethlehem" with confidence. There is no better or more certain way to obtain pipe that you *know* will meet every test and satisfy the most exacting requirements.

BETHLEHEM STEEL COMPANY ~ *General Offices:* Bethlehem, Pa.

District Offices:

New York Boston Philadelphia Baltimore Washington Atlanta Pittsburgh Buffalo
Cleveland Detroit Cincinnati Chicago St. Louis San Francisco Seattle Los Angeles Portland Honolulu

Bethlehem Steel Export Corporation, 25 Broadway, New York City
Sole Exporter of Our Commercial Products

BETHLEHEM STEEL PIPE

American Hammered Piston Rings

Individually cast, mechanically hammered to give lasting tension, particularly designed and adapted for Oil Field and other severe service.

Endorsed and used as Factory Equipment by---

Ajax Iron Works	Corry, Pa.
Bruce-Macbeth Eng. Co.	Cleveland, Ohio
Bovaird & Seyfang Mfg. Co.	Bradford, Pa.
Bradford Supply Co.	Bradford, Pa.
C. & G. Cooper Co.	Mount Vernon, Ohio
Chicago Pneumatic Tool Co.	New York, N. Y.
De La Vergne Machine Co.	Philadelphia, Pa.
Franklin Valveless Eng. Co.	Franklin, Pa.
Ingersoll-Rand Co.	New York, N. Y.
McIntosh & Seymour Corp.	Auburn, N. Y.
Muncie Oil Engine Co.	Muncie, Ind.
National Supply Co.	Toledo, Ohio
Pennsylvania Pump & Compressor Co.	Easton, Pa.
Power Mfg. Co.	Marion, Ohio
Jos. Reid Gas Eng. Co.	Oil City, Pa.
Sullivan Machinery Co.	Michigan City, Ind.
Titusville Iron Works	Titusville, Pa.
Wilson Snyder Mfg. Co.	Pittsburgh, Pa.
Worthington Pump & Mach. Corp.	New York, N. Y.

May be obtained from the above companies, or their selling agents, in standard sizes or oversizes.

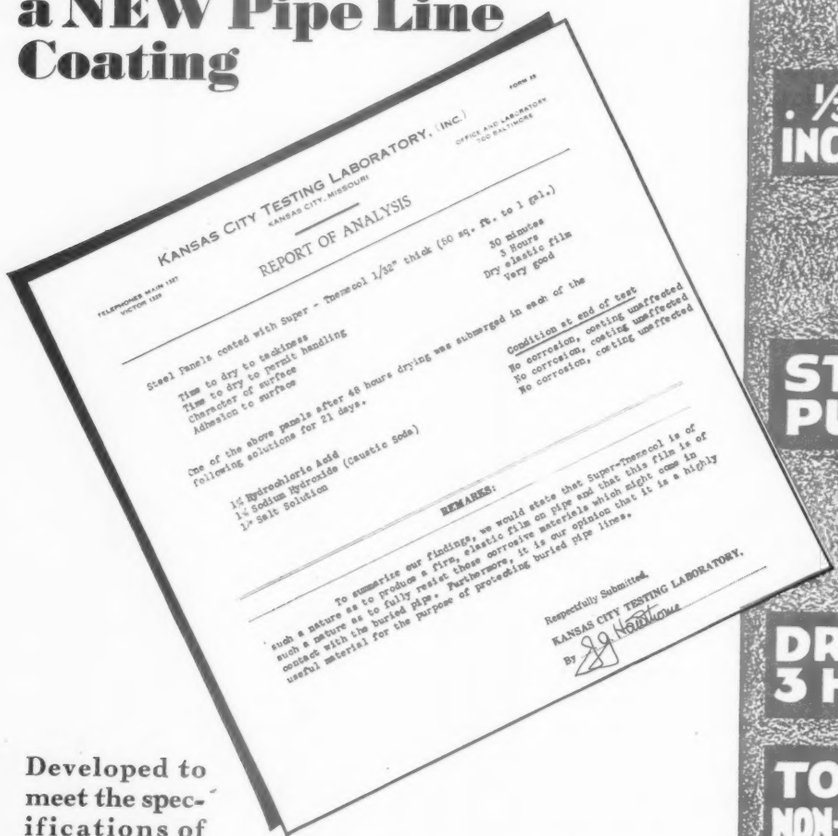
Rings for any engine or compressor not listed above can be obtained direct from us.

The American Hammered Piston Ring Co. Baltimore, Md.

Announcing—

Super TNEMECOL

a NEW Pipe Line Coating



KANSAS CITY TESTING LABORATORY, (INC.)
KANSAS CITY, MISSOURI

REPORT OF ANALYSIS

Steel Panels coated with Super - Tnemecol 1/32" thick (60 sq. ft. to 1 gal.)

Time to dry to tackiness	30 minutes
Time to dry to permit handling	3 Hours
Character of surface	Dry elastic film
Adhesion to surface	Very good

One of the above panels after 48 hours drying was submerged in each of the following solutions for 21 days.

	Condition at end of test
1% Hydrochloric Acid	No corrosion, coating unaffected
1% Sodium Hydroxide (Caustic Soda)	No corrosion, coating unaffected
1% Salt Solution	No corrosion, coating unaffected

REMARKS:

To summarize our findings, we would state that Super-Tnemecol is of such a nature as to produce a firm, elastic film on pipe and that this film is of such a nature as to fully resist these corrosive materials which might come in contact with the buried pipe. Furthermore, it is our opinion that it is a highly useful material for the purpose of protecting buried pipe lines.

Respectfully Submitted,
KANSAS CITY TESTING LABORATORY.
By J. G. Nourse

APPLIED COLD . . .

. . . WITH STIFF BRUSH

. 1/32 TO 1/8 INCH THICK

. . . . . AS DESIRED

STAYS PUT . . .

TACKY IN 1/2 HOUR

DRY IN 3 HOURS

TOUGH NON-FRACTURABLE COATING

Developed to meet the specifications of one of the foremost pipe-line engineers.

"If Continental Sells It . . . There is No Better"

The Continental Supply Co.
General Offices: St. Louis
Export Offices: 74 Trinity Court, New York
London Offices: 316-17 Dashwood House, Old Broad St., E. C. 2

The Continental Supply Co., Ltd.
Lancaster Bldg. Calgary, Alberta, Canada

CONTINENTAL

Seminole Proves Conservation Possible

Highest daily average estimated total production in 1928, week ended Dec. 29, 2,585,844 bbls. Lowest in 1928, May 19, 2,338,241 bbls.

Production of Highly Desirable Crude Curtailed More Than 120,000 Bbls. Daily. Example for Rest of Country

By Andrew M. Rowley

Highest daily average estimated light oil production in 1928, week ended Dec. 29, 2,158,134 bbls. Lowest in 1928, Mar. 3, 1,927,713 bbls.

No better proof is needed that crude oil production in all areas of the United States can be held down to market requirements if the operators make a sincere effort to accomplish this object than the results achieved in the greater Seminole area in Oklahoma. The daily average output of pools in that section last week was several hundred barrels under the figure permitted by the conservation agreement and the order of the State Corporation Commission and more than 120,000 barrels daily below the potential production of the area. It should be remembered, also, Seminole crude is of the highest gravity and most desirable from a refining standpoint produced in the entire Mid-Continent territory. The commendation of the petroleum industry at large should be accorded operators in the Seminole area for what they have done, not only in pinching in their own production for the benefit of the industry, but for proving to the entire industry "it can be done."

Opening of wells in the Seminole area at the beginning of this week to procure new figures of potential output for proration purposes resulted in a production for the 24-hour period of more than 120,000 barrels above the daily average of last week. This, probably, will cause an increase in the daily average of Oklahoma for the current week although this excess production will be made a part of the allowable output sometime during the two weeks' period covered by this potential.

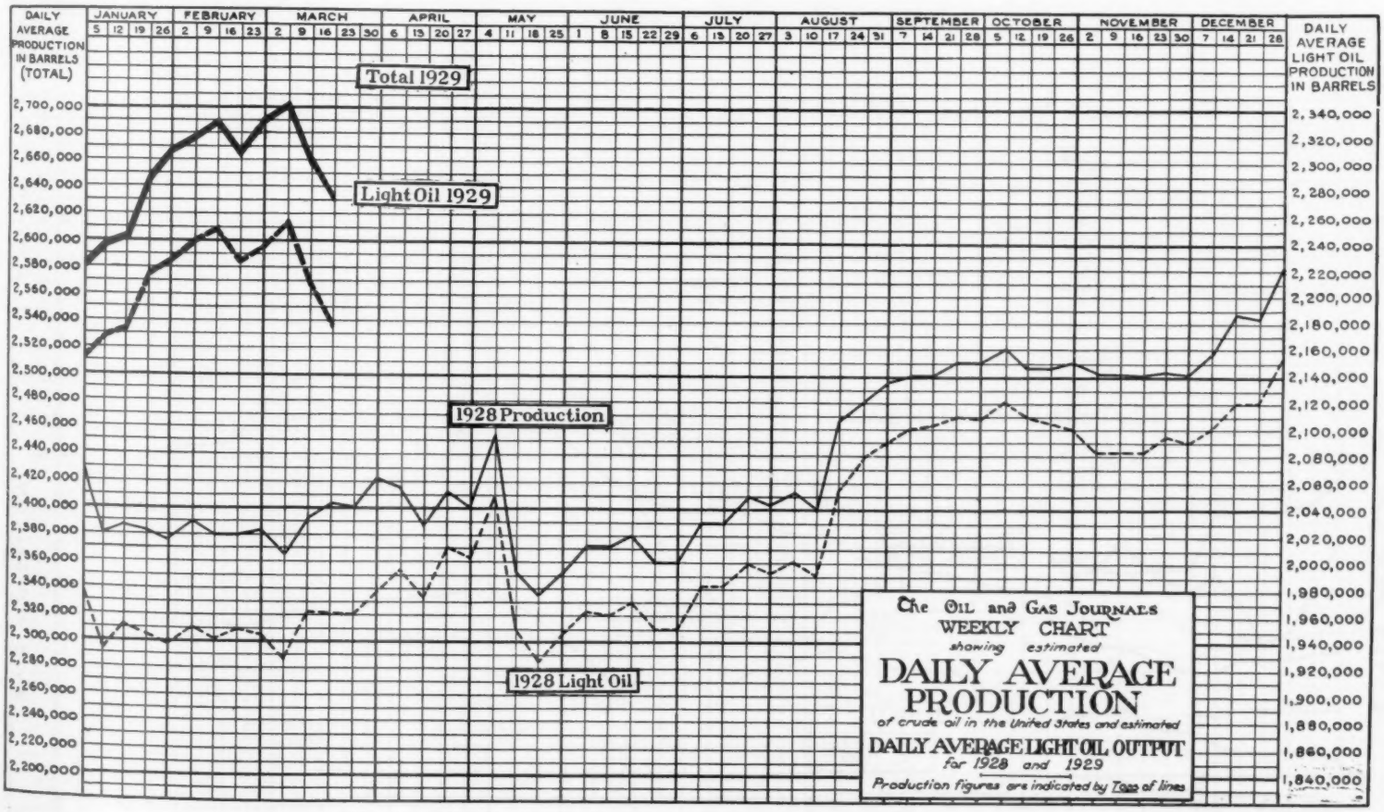
If operators in all other sections of the United States co-operate in the plan proposed by the American Petroleum Institute to hold production of the country as a whole down to the production of 1928, there is little doubt but that this object can be achieved. There is no doubt whatever such an accomplishment will mean a vast improvement in conditions affecting the petroleum industry. Every branch of the industry will benefit from the stabilization which will result.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended March 16, and a comparison with the previous week follows:

	March 16		March 9	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	10,015	.....	10,515	.....
Burbank	22,470	.....	22,335	.....
Other Osage Fields	25,395	.....	25,785	.....
St. Louis-Pearson	95,430	.....	101,320	.....
Cushing and Shamrock	20,770	.....	20,470	.....
Bristow	19,360	.....	18,835	.....
Allen	26,685	.....	25,595	.....
Seminole	263,970	.....	287,420	.....
Northern Miscellaneous	111,065	.....	111,840	.....
Southern Fields	54,395	.....	55,210	.....
Total Oklahoma	649,555	.....	679,325	.....
West Texas—				
Hendricks	166,592	.....	171,148	.....
Yates	86,892	.....	86,421	.....
Remainder	132,156	.....	129,309	.....
Total West Texas	385,640	.....	386,878	.....
North Louisiana	30,030	6,010	30,005	5,610
Arkansas	24,650	49,870	23,175	50,450
North Central Texas	135,827	.....	134,888	.....
Texas Panhandle	55,950	.....	55,640	.....
East Central Texas	21,892	.....	22,108	.....
Kansas	96,320	.....	95,320	.....
Total Mid-Continent Area	1,399,864	55,880	1,427,339	56,060
Gulf Coast	.....	148,981	.....	144,437
Southwest Texas	.....	61,731	.....	62,371
Eastern	109,000	.....	108,000	.....
Rocky Mountain Area	65,563	.....	70,855	.....
California—				
Santa Fe Springs	177,000	.....	189,000	.....
Long Beach	184,000	.....	180,000	.....
Torrance	2,000	12,750	2,000	12,500
Huntington Beach	46,000	.....	46,500	.....
Elwood	27,000	.....	24,000	.....
Inglewood	14,750	11,000	15,000	11,000
Ventura Avenue	56,000	.....	56,000	.....
Seal Beach	37,000	.....	35,000	.....
Remainder of State	57,000	166,000	57,500	166,000
Total California	600,750	189,750	605,000	189,500
Total United States	2,175,177	456,342	2,211,194	452,368
Grand Total	2,631,519		2,663,562	

→ **Total Decrease, 32,043 Bbls.; Light Oil Decrease, 36,017 Bbls.** ←



Natural Gasolines in Rapid Advance

Mid-Continent Prices Higher in Response to Buying Wave. Government Data Indicate Improvement in Fuel and Gas Oils

By C. O. Willson

A rapid advance in natural gasoline prices with fractionally higher quotations on kerosene were the two important price changes in the Oklahoma (Group 3) market during the past week. Natural gasolines which have been relatively stronger than the refinery gasolines for a period of several months responded to another buying wave in Oklahoma with prices for the A and AA grades which are on parity with the high gravity refinery gasolines.

Among the remaining products the better feeling in regard to refinery gasoline continues although a few scattered sales of U. S. Motor gasoline under the low of last week were reported. On the other hand predictions were heard in the trade during the past week that prices would be advanced above their present levels before the end of the month. These predictions apparently reflect the more optimistic view taken of the crude oil situation. The explanation of the latter development lies in the movement to curtail production in line with consumption. These plans are explained elsewhere in this issue.

Furnace oils are much easier and prices again receded. This slowup in furnace oils also is reflected in the demand for the low cold test high gravity fuel oils. A number of cancellations for furnace oil materials were reported. Gas oils of all grades continue strong and prices steady.

Natural Gasolines

The A grades of natural gasoline on Tuesday were strongly held at 7½ cents with buyers who were willing to purchase on that basis for delivery over the balance of the month. The remaining grades (Grades B, BB and C) while not as strong as the A grades were being bought steadily and the advances for the week totaled approximately 1 cent per gallon.

The strength shown by natural gasolines during March further supports the contention of those who have maintained that the 1929 outlook for that branch of the oil industry was favorable. Production is greater than last year but the demand to date has shown a larger increase and although some material is being run to storage the stock situation is in a much better position than in the case of refinery gasolines.

Manufacturers feel that outside of California the present production will not increase materially with a decline in Mid-Continent production assured later in the year unless new fields offset the natural decline in some of the areas with heavy flush production. The greater part of the increased production in the Mid-Continent during the past two years has come from the greater Seminole area and the Texas Panhandle. It is not expected that either area will increase its present output materially with a reduction in Seminole expected later in the year.

On the consuming end the high prices which prevailed for natural gasolines in comparison to refinery gasoline has necessarily brought some changes among the buyers. Inland refiners and jobbers who are compelled to pay a heavy freight rate have reduced their purchases and this trend no doubt will continue. On the other hand several coastal and export buyers and inland refiners with refineries near the natural gasoline plants have increased their purchases.

The coastal refiners operating with West Texas crude oils and low gravity crudes from other areas are the large

(Continued on Page 154)

REFINED MARKET BAROMETER

Tank car prices on the U. S. Motor grade of gasoline were again reduced one-fourth cent along the East Coast during the past week. The price appears steady at the lower level. At interior points refinery gasoline prices were firm with minor advances in some areas of the Mid-Continent. The gasoline price situation at California refineries, which has been demoralized for several weeks, is expected to improve with the advances which have been made effective in the tank wagon and service station prices. Kerosene prices were lowered by East Coast refiners where the movement is slow but at interior points where the spring demand is under way prices are advancing. Natural gasolines advanced sensationally in the Mid-Continent with no changes in California. Improvement in lubricating oils was apparent in enough areas to be termed general, prices advancing on both bright stocks and cylinder stocks at scattered points. Fuel oil prices were steady in all areas. Furnace oil demand is slowing up with the end of the season. Petroleum wax is generally reported weak.

Mid-Continent—Kerosene prices higher in all areas. Rapid advance in natural gasolines. Refinery gasolines steady. No important changes in fuel oil prices. Gas oils strong. Furnace oils prices lowered. Better movement of lubricants. Wax weak.

East Coast—U. S. Motor gasoline reduced one-fourth cent. Kerosene prices also lowered. Steady movement of bunker fuel oil prices. Prices reduced on some grades of wax. Prices higher on better grades of bright stocks and cylinder stocks.

Pennsylvania—Steam refined cylinder stocks higher. Some grades of bright stocks also advanced. Domestic grades of gasoline lower. Kerosene and fuel oils prices stronger. No change in wax.

California—Expect refinery market to improve following action of Standard Oil Co. of California and other major companies which have advanced retail and tank wagon prices.

Chicago—Gasoline market more active with no changes in price. Kerosene in demand and prices higher. Distillates quiet. Gas oils and high gravity fuel oils easier.

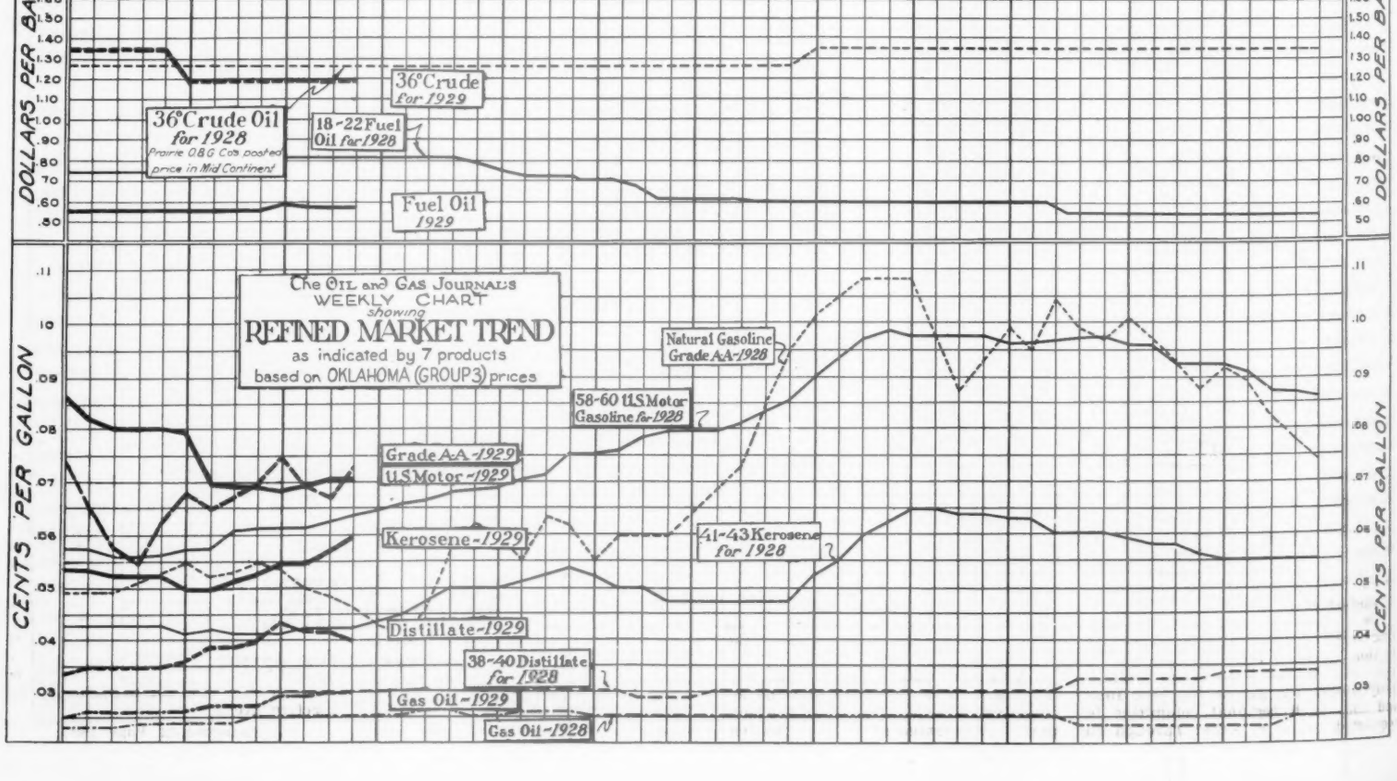
Gulf Coast—Better demand for lubricating oils. Fuel oil prices firm.

FUEL OIL MID-CONTINENT REFINERIES

(Thousands of barrels)

	Production			Stocks		
	Jan., 1929	Dec., 1928	Jan., 1928	Jan., 1929	Dec., 1928	Jan., 1928
Oklahoma	2,983	3,165	2,826	5,067	6,385	4,517
Texas*	2,158	2,140	2,527	2,693	2,710	1,569
Louisiana-Arkansas*	1,163	1,280	1,036	1,010	1,037	604
Total	6,304	6,585	6,389	8,770	10,132	6,690

*Gulf Coast refineries not included. Data based on Bureau of Mines.



1928 Crude Production Set as Limit

A.P.I. Committee Recommends Inauguration of General Curtailment Program April 1. To Include Future Years Also

By Neil Williams
Houston Bureau, The Oil and Gas Journal

HOUSTON, Tex., Mar. 18.—Agreeing that production of crude oil in the United States and northern South America in 1928 should be considered the peak of what is required not only during this year but for years to come, and deciding that, starting April 1, 1929, average production in these areas should not exceed the daily average for 1928, the General Committee of the American Petroleum Institute on World Production and Consumption of Petroleum and Its Products at its meeting here last Friday and Saturday incorporated this decision in a resolution for presentation at the special meeting of the directors of the Institute in New York March 27 and recommended that the action be submitted to the Federal Oil Conservation Board for its approval and that state authorities in the principal oil-producing states be advised of the proposed action.

There seems to be but little doubt that the board of directors of the American Petroleum Institute will approve the resolution adopted at the meeting here and that the entire matter will be placed before the Federal Oil Conservation Board. If no objection to the proposed plan is raised by the Government, the various states interested then will be notified of the proposal to curtail production more nearly to market requirements.

Daily average production of crude oil in the United States during 1928, according to The Oil and Gas Journal's figures, was 2,453,051 bbls. Production for the week ending March 16 of this year averaged 2,631,519 bbls. a day, or 178,468 bbls. a day more than the average for last year. The accompanying table shows production for the various areas in the United States in 1928 and for the week ending March 16 of this year and production of and imports from South America and Mexico.

CRUDE OIL PRODUCTION IN 1928 AND NOW

	Total 1928	Daily average 1928	Daily av'age. week ending Mar. 16, 1929
California	231,982,597	633,832	790,500
Eastern	40,886,000	111,710	109,000
Kansas	38,150,878	104,237	96,320
Oklahoma	247,500,851	676,232	649,555
North Central Texas	50,447,168	137,834	135,827
West Texas	120,632,993	329,623	385,640
Texas Panhandle	24,736,494	67,586	55,950
East Central Texas	8,695,507	23,758	21,892
North Louisiana	15,367,493	41,988	36,040
Arkansas	32,137,934	87,809	74,520
Rocky Mountain	29,120,084	79,663	65,563
Louisiana Gulf Coast	7,495,071	20,478	19,181
Texas Gulf Coast	40,379,271	110,326	129,800
Southwest Texas	10,284,452	28,100	61,731
Total United States	897,816,793	2,453,051	2,631,519
Venezuela	108,098,108	295,350	*371,630
Colombia	19,655,000	53,702	*54,679
Mexico	49,800,000	136,066	†99,285
	177,553,108	485,118	

*January, 1929. †Week ending March 9, 1929.

CRUDE OIL IMPORTS

Venezuela	46,976,000	128,000	*181,400
Other countries	32,607,000	89,000	*79,100
	79,583,000	217,439	260,500

*January, 1929.

Action of Committee

The action taken by the general committee at the meeting here is set out clearly in the following resolution, which was adopted:

"Whereas, the Federal Oil Conservation Board has repeatedly called the attention of the country to the overproduction of crude oil and the consequent waste of this irreplaceable national resource, and has repeatedly invited the industry to co-operate with governmental agencies in improving the situation and has said, 'the complete organization of co-operative effort is recommended, with simple but effective working units that will insure full contact of the industry with both state and Federal Government and continuous contact of all operators in an oil field'; and

"Whereas, the state authorities of all the principal oil-producing states have exhibited a keen interest in the subject and a desire to have the co-operation of the industry in formulating and carrying on an effective program;

"Therefore, be it resolved that the production of the four regional areas represented by the committees will be sufficient for 1929 to meet the consuming requirements of the territories which they supply if the 1928 basis of production be adopted.

"Be it further resolved that beginning April 1, 1929, the average production of the four regions on a daily basis should not exceed the average daily production during the year 1928, and that each regional committee be requested to meet, either through its elective representatives on the general committee, or as a whole, with the general committee in New York, at the Institute, on the morning of the twenty-seventh at 9 o'clock to report to the general committee whether or not the production in the respective regions can be brought to the 1928 average for that region.

"Be it further resolved, that in the event of favorable reports and the approval of the Institute, that the action be at once submitted to the Federal Oil Conservation Board for its approval, and, if approved by the Federal Oil Conservation Board, that the state authorities in the principal oil-producing states be at once advised of the proposed action which will become effective as the policy and program of the Institute if approved by such state authorities."

Up to Regional Committees

As indicated by this resolution and explained during the sessions here, a real task now rests with the four regional committees in working out a plan for limiting the production in their respective districts to the 1928 average. Meetings of the regional committees, representing the Pacific Coast, the Gulf Coast and the Atlantic Seaboard, interior United States, and Mexico and northern South America, will be held as soon as possible and before the March 27 directors' meeting at New York. K. R. Kingsbury, chairman of the Pacific Coast regional committee, already has called a meeting of that committee to be held March 21 at San Francisco.

Although the general committee heard reports of the various regional committees on problems in their respective districts, no attempts were made by the general committee to determine on any plan of how to curtail the production in each individual region as each region has its own peculiarities. However, the unanimous expression of those present that production must be curtailed and the assurances of co-operation of all the companies represented as well as the federal and state authorities who attended indicated that a satisfactory program of curtailment of production could be accomplished in each district to meet with the general committee's recommendations.

Permanent Organization

In addition to recommending the curtailment of production to the 1928 basis, the general committee went on record as favoring the American Petroleum Institute setting up permanent machinery and the appointing of a number of committees to study carefully all phases of the conservation movement, not only in the manner of production but also in the proper use of petroleum products, comprehending within this study not only the regions represented, but also the entire world. These recommendations also will be submitted to the board of directors at New York.

The theme of the gathering at which some 50 members of the general committee, regional committees, invited federal and state conservation officials and other guests attended was to arrive at the extent to which daily average production should be curtailed, or, in more explicit words, to determine what are to be the crude requirements for 1929 taking into consideration the increased consumption expected and providing for reducing of the present large accumulated stocks.

One of the details in this curtailment program taken up by the committee but which remains to be worked out concerns the regulation of the daily average production allotment of each region according to the seasonal demand. In other words, it remains to be determined whether during the summer months the producers will be allowed to swing the production curve upward to meet the increased demand for refinery products with a return to a daily output below the normal at other times, thus enabling perhaps a more stable situation.

The opening address of R. C. Holmes, chairman of the general committee, appearing on page 31 of this issue, outlined in detail the attitude that was to be taken by the committee members in reaching their conclusions on crude requirements as based on the findings from the reports of the various regional committees. Along this line, Mr. Holmes advised the committee in part that in making its decision it should consider:

Holmes' Suggestions

First, that while the committee was dealing principally with the United States and the Western Hemisphere, it would have in mind the worldwide picture.

Second, the extent to which crude production as a whole should be reduced to constitute a substantial conservation permitting of absorption of excess stocks and providing for the world's requirements of refined products. The latter was to be based not only on the increased demand for these products but also on the greater efficiency in refinery operations in higher yields from crude.

Third, the probable recoverable oil from present known fields of the entire world, as well as the opinion of those who are considered best qualified to estimate the possible amount of oil yet undiscovered.

Fourth, how control over production can be exercised, whether state or federal legislation is necessary, to what extent control of gas production would contribute to the plan, what part leasing contracts, zoning and other such items would play.

Fifth, how waste can be avoided, considering a more systematic system of producing, the cost to the industry in low refinery prices, the cost of storing and carrying excess stocks, and the cost of wasteful consumption.

Sixth, the probable effects of more scientific aids in locating oil deposits in giving greater stability to the industry.

Under the recommendations of the general committee which acted on the advice of a special committee consisting of the chairmen of the regional committees in session Friday night, it was felt that holding in of production during 1929 to a figure approximating the production of 1928 would meet the above requirements. The recommendations of the committee also apply to imports, which also are to be curtailed to those of 1928. Production figures of Mexico and United States imports from that country have not been taken into consideration as they already are considerably lower than during 1928.

Distribution of the curtailment in production caused considerable discussion at the meetings, particularly by the California and Venezuela representatives. Daily average production in those regions is showing marked increases and it was felt by those committees that reducing the production there to the 1928 figure would work an unusual hardship, more so than in fields where production has been held in check to some extent and possibly might show discrimination in favor of fields whose output has been lower this year than last, permitting development there if new producing areas are opened.

However, these problems were solved satisfactorily in such a way as to permit some areas to make up in daily output what is being lost in others, a distribution of this production to be made according to the needs in the respective areas.

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President Hoover's Ban on Oil Permits

Declares Government Must Cease to Alienate Its Oil if We Are to Have Conservation of Petroleum Resources

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., March 18—The announcement made by President Hoover that no more permits would be approved for the leasing of land on the public domain, unless authorized by a mandatory act of Congress, has taken official form in an order issued by the Commissioner of the General Land Office and approved by Secretary Ray Lyman Wilbur, Secretary of the Interior.

Under date of March 13 the Commissioner of the General Land Office sent instructions to all local land offices in the following language:

"No oil and gas prospecting permits will be issued on and after March 12, 1929. Reject all applications for oil and gas permits now pending in your office and receive no more. All orders for drawings hereby revoked."

No more complete closing of the door of the public domain for exploration and exploitation could be effected than is now done by this action of the President. Up to March 1, 1929 there were issued 34,950 permits for prospecting for oil and gas. Of this number 14,690 permits have been cancelled which leaves 20,260 permits pending. All of these permits were issued under section 13 of the general leasing act of February 25, 1920. This is known as the section permitting wildcat permits.

Of this vast number of prospecting permits 56 have resulted in leases for the exploitation of oil deposits. The maximum acreage covered by any one lease is 2,650 acres or a total of 143,300 acres. However the leases actually cover much less than that area, the total acreage not being stated in any government compilation.

In addition to these 56 leases issued under section 13 there are 489 other leases, very few of which have been cancelled, making a total of 545 leases granted for exploitation. All of these 489 leases were granted under the provisions of sections 18, 18a, and 19; also section 17 which provides for the sale of public leases and under all other sections of the general leasing act except those under section 13.

Naval Oil Reserves

The exploitation leases referred to in the foregoing include all that have been granted in the naval oil reserves. None of these will be cancelled and the only way that could be followed to interfere with them lies through the courts and by voluntary relinquishment. Of the 20,260 permits pending many have expired and applications for extensions have been received. Others may have obtained some sh wing of oil so that it is not now possible to tell how many, if any more leases for exploitation will be issued. Official opinion is that there will be very few.

The United States Geological Survey has stated from time to time that one tenth of the oil production of the United States comes from leases on the public domain. Of course this does not include Indian reservations. There is no one in official circles dealing with oil on the public domain who cares to venture in making an estimate of the potential oil production of the public domain, because exploration has never provided sufficient data to do that and experience has shown that geological surveys, while extremely valuable in the discovery of oil domes, are not conclusive. It has become a byword that only the drill can find oil and instances are pointed out in which geologists have declared an area to be without oil only to have prolific oil fields developed in the condemned locality.

The public domain consists of 194,000,000 acres but figures do not exist in the form of any compilation to show how much of this vast domain has been tested by the drill to determine whether oil actually exists. In Montana, Wyoming and California as well as elsewhere, oil structures have been developed in localities in which geologists held out no hope for finding oil. So that so far as its oil content is concerned the public domain is largely unknown territory.

Survey Being Made

The order of President Hoover closing the public domain for oil prospecting is now resulting in a vast survey by the Interior Department to determine the standing of oil permits, to see what rights permitees have at the present time and what shall be the policy of the government in dealing with them. All legal rights that have been acquired are to be respected.

This action by the President followed close upon the act passed by Congress March 2, 1929 which provides that the Secretary of the Interior shall lease not less than 25,000 acres of the oil lands of the Osage Indians annually. This is a reduction of the amount that was leased annually under the law which was 100,000 acres and it is confidently believed that the interests of the Indians will be conserved and that in the long run they will reap far greater advantage under this restricted leasing plan.

The Indians have acquired vast incomes from accumulated funds that have resulted from bonuses and royalties on their lands that have been disposed of, so that it is believed by holding in production they will be benefited by receiving a higher price for their oil. At the same time this act will materially reduce the surplus that is not needed and which it is believed has done much to demoralize the oil market.

To a large extent Indian oil leases have been purchased by oil companies not for the purpose of increasing oil supplies but to prevent others from having advantage of such ownership according to the views of some officials.

Policy Approved

The reaction of Congress up to this time indicates approval of the policy of the President inclosing the public domain against oil exploration. Senator Walsh of Montana called of Mr. Hoover at the White House and later indicated that he would not attempt to oppose this oil

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Rocky Mountain Operators Anxious

Doubtful About Effect of New Presidential Policy on Wildcatting in Their States. Legality Is Questioned

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Mar. 18.—President Hoover's statement outlining the policy of his administration on the conservation of oil resources on the public domain, followed by the instructions of the Secretary of the Interior to the registrars of district land offices to reject all applications for prospecting permits now pending and to receive no more, is regarded as of vital importance to operators in the entire Rocky Mountain region.

The order closes to prospectors from March 12, 1929, until such time as it is changed, more than 22,000,000 acres of public domain, including national forests and unappropriated and unreserved government land, in Colorado; 26,000,000 acres in Wyoming; 26,000,000 acres in Montana; 33,000,000 acres in Utah; 27,000,000 acres in New Mexico; and varying quantities in other public land states. A total of 34,950 permits had been issued under the general leasing act of February 25, 1920, up to the end of 1928, of which 14,690 had expired or been closed out. A permit may embrace as high at 2,560 acres. The number of permits in effect at the close of 1928 in this territory were: Colorado, 2,987; Utah, 3,298; Wyoming, 4,285; New Mexico, 4,286. These are not involved in the first order issued, but are subject to cancellation at the end of two years under certain conditions. It is this fact that concerns operators more than any other phase, and the policy of the Government concerning renewals will be anxiously awaited.

Legal Issue Raised

A legal question appears involved in the right of the Secretary of the Interior to arbitrarily close the public domain to prospecting for oil. An executive of one of the major companies pointed out that Congress in passing the leasing act of February 25, 1920, merely changed the method of disposing of the mineral lands from selling them to leasing them and that it clearly was not the intent of the national legislative body to deprive the people of the use of these lands. If the Secretary of the Interior has the right under the word "may" used in the act to prevent prospecting for one year, he has the right to withdraw the lands for 10 years or any other period. This official declared that the Supreme Court of the United States has in numerous cases held that "may" means "shall," or "must" in carrying out the mandates of Congress except where judicial powers are necessary in determining the merits of a particular case.

The leasing act consists of two parts. One has to do with the leasing of the public domain and the other is the relief section. The provisions of the relief section have been put into effect and it is agreed that part of the act is now obsolete so far as the present discussion is concerned. Section 13 is the one under which permits are granted and Section 14 applies to the granting of leases to holders of permits who have made discoveries. Section 13 reads in part as follows:

"That the Secretary of the Interior is hereby authorized under such necessary and proper rules and regulations as he may prescribe, to grant to any applicant qualified under this Act a prospecting permit, which shall give the exclusive right, for a period not exceeding two years, to prospect for oil or gas upon not to exceed 2,560 acres," etc. The legal question involved is whether "hereby authorized" gives to the Secretary of the Interior mandatory powers or discretionary powers to do as he feels, create a policy of issuing or not issuing permits, or is purely a judicial discretion. An attorney for one of the major companies expressed the opinion that the order rejecting all applications for permits is contrary to the spirit and purpose if not the letter of the leasing act as passed by Congress.

A paragraph in Section 2 of Circular No. 672, (regulations concerning oil and gas permits issued by the General Land Office) says: "It should be understood that under the act, the granting of a prospecting permit for oil and gas is discretionary with the Secretary of the Interior, and any application may be granted or denied, either in part or its entirety, as the facts may be deemed to warrant." It is pointed out, however, that this is a part of the regulations prescribed by the Secretary of the Interior under the authority of Section 13 of the leasing act, which is considered an expression of the right to exercise judicial discretion. The title of the act itself reads: "An act to promote the mining of coal, phosphate, oil, oil shale, gas and sodium on the public domain." The word "promote" may have an important bearing on the purpose of Congress as disclosed in the act.

Effect of Policy

While the legal interpretation of the act probably will be subjected to a test in the courts before it finally is decided, a number of the operators are more immediately concerned with what effect the new policy will have on their programs. So far the only thing of a definite and specific nature that has come out is the order to reject all pending applications for permits and to receive no others. That leaves the question of policy of the Government as to extension or cancellation of existing permits upon expiration of two years from the date of issue to conjecture and some definition of its policy will be eagerly awaited. It has been found as a rule in the Rocky Mountain states that two years is not sufficient time to prospect under a permit and Congress has passed three measures extending the time. The first extension, for three years, was granted on January 11, 1922; the second, on May 5, 1926, granted an extension of two years, and the third, on March 9, 1928, gave two years more. All of these acts of extension provided that the Secretary of the Interior may grant extensions if he shall find that the permittee was unable to exercise diligence in complying with the provisions of the permit. Almost all of the operators have been operating under these extensions. Prospective oil or gas structures in the Rocky Mountain states are different from those in other areas. Extensive surface geological work has to be done, this is aided with geophysical instruments, and often it takes close to two years to complete the preliminary work before drill-

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Oil Industry Must Take Clear Stand

Owes Plain Duty to Both Federal and State Governments to Assist in Carrying on Work Outlined by Conservation Board

By R. C. Holmes*
President of The Texas Company

When President Coolidge appointed the Federal Oil Conservation Board on December 19, 1924, he said in part:

"It is evident that the present methods of capturing our oil deposits are wasteful to an alarming degree in that it becomes impossible to conserve oil in the ground under our present leasing and royalty practices if a neighboring owner or lessee desires to gain possession of his deposits.

"Developing aircrafts indicate that our national defense must be supplemented, if not dominated, by aviation. It is even probable that the supremacy of nations may be determined by the possession of available petroleum and its products.

"The problem of a future shortage in fuel and lubricating oil, not to mention gasoline, must be avoided, or our manufacturing productivity will be curtailed to an extent not easily calculated.

"That overproduction in itself encourages cheapness, which in turn leads to wastefulness and disregard of essential values. Oil, of which our resources are limited, is largely taking the place of coal, the supply of which seems to be unlimited, but coal cannot take the place of oil in most of its higher uses, on land or sea or in the air.

"For the purpose of giving this responsibility of government in all of its aspects the consideration it demands, I have constituted a Federal Oil Conservation Board, consisting of the Secretaries of War, Navy, Interior and Commerce, to study the government's responsibilities and to enlist the full co-operation of representatives of the oil industry in the investigation."

Need of Co-operation Emphasized

Since that time this Board has issued three carefully prepared reports to the president, emphasizing the necessity of co-operation within the industry and between the industry and the governmental agencies in order to solve the increasingly difficult problem of conserving our supply of petroleum. Public authorities of the principal oil producing states have, likewise, shown a desire and willingness to assist in the matter. Under these circumstances, the industry now owes a plain duty to both Federal and State Governments to take a constructive stand and to assist to the full extent of its ability in carrying on the work which has been outlined by the Federal Oil Conservation Board.

The present meeting is of the General Committee appointed by the American Petroleum Institute to study the situation and we are fortunate in having with us representatives of the Federal Oil Conservation Board and of the State agencies of the three principal oil producing states.

In response to our invitation to the Federal Oil Conservation Board to meet with us here, Secretary Wilbur advised that it would be very difficult for any of the Conservation Board to leave Washington at this time, but that he was asking Dr. George Otis Smith, Director of the Geological Survey, and Chairman of the Board's Technical and Advisory Committee, to be with us. He also said: "I am glad to hear that you have also invited representatives of several state conservation bodies to participate in your deliberations. The beneficial control of petroleum is something that federal and state governments and your great industry must work out by joint action."

Policy of Complete Conservation

Since we left home for this meeting, the daily press quotes President Hoover as saying that "there will be no leases of oil on government lands under the Hoover administration without specific legislation by Congress. The administration policy will be that of complete conservation. There will be no leases for disposing of oil lands no matter what category except those which may be mandatory by Congress." It is understood that this refers to government activities in regard to government lands and does not include private efforts at conservation.

The failure on the part of those in the oil industry, itself, to appreciate or understand, and to co-operate even to the extent we know we are permitted to do, is, in a degree, responsible for the failure at this time to be operating in a manner

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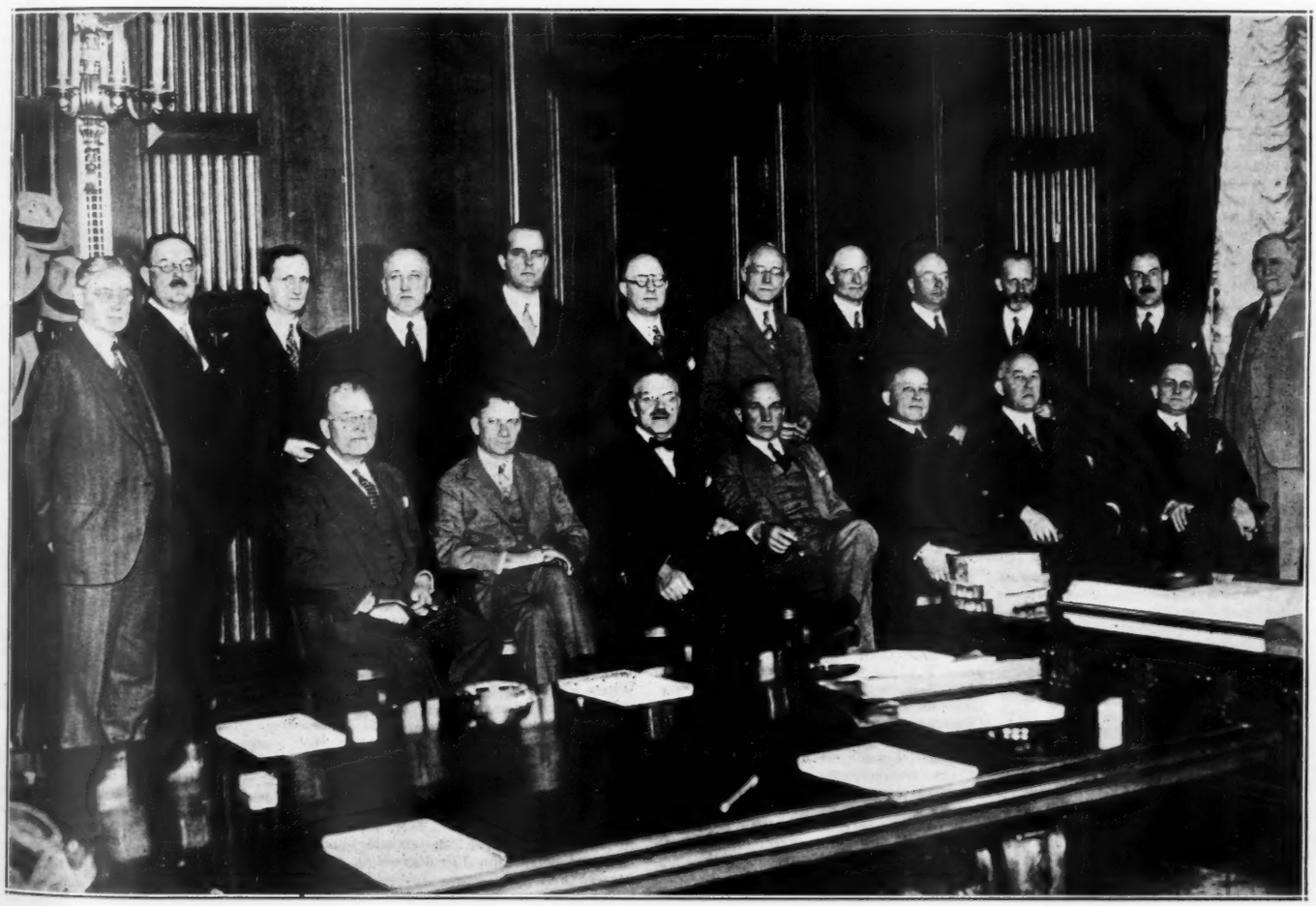
* Address delivered at the opening of the General Committee meeting on petroleum production and conservation in Houston, Tex., March 15, 1929.

A.P.I. COMMITTEE STUDYING CRUDE OIL SITUATION AT HOUSTON MEETING



General committee of American Petroleum Institute hearing reports of regional committees at Houston, Tex. Standing, left to right: R. W. McIlvain, Pure Oil Co.; J. A. Brown, Standard Oil Co. of New Jersey; A. E. Watts, Sinclair Consolidated Oil Co., New York; Axtell Byles, Tidewater Associated Oil Co., New York; J. W. Stewart, Pan American Petroleum & Transport Co., New York; Roy B. Jones, Panhandle Producing & Refining Co., Wichita Falls, Tex.; W. C. Franklin, Tidal Oil Co., Tulsa; B. H. Stephens, Magnolia Petroleum Co., Dallas, Tex.; W. S. Farish, Humble Oil & Refining Co., Houston; W. N. Davis, Phillips Petroleum Co., Bartlesville, Okla.; G. Legh-Jones, Shell Co. of California, San Francisco; L. P. St. Clair, Union Oil Co. of California, Los Angeles.

Sitting, left to right, are: Richard Aitey, Asiatic Petroleum Co., New York; E. J. Sadler, Creole Petroleum Co., New York; F. R. Coates, Henry L. Doherty & Co., New York; R. C. Holmes, The Texas Company, New York; E. B. Reeser, Barnsdall Oil Corp., Tulsa, K. R. Kingsbury, Standard Oil Co. of California, San Francisco; and W. R. Boyd, Jr., executive vice president, American Petroleum Institute.

Hearing on Gasoline Specifications

Proposed Changes of Government Fail to Find Favor With Representatives of Oil Companies. Several Substitute Plans Offered

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Mar. 16.—The advisory board of the technical committee on lubricants and liquid fuels of the Federal Specification Board held a public hearing here today by invitation of the American Petroleum Institute for the purpose of considering the proposed revision of government specifications for motor gasoline and a special gasoline.

This conference called together the leading technical representatives of the oil industry and officials of the Government who are charged with the duty of providing motor fuel for the Army and Navy and other government departments.

Although several proposed changes in the specifications were to be considered it soon became evident that the one outstanding element of interest to the oil industry was the proposal of the specifications board to provide a new grade of motor fuel for quick starting in cold weather. This action had been taken upon request of the quartermaster's department of the Army. Capt. Paul G. Rutten of the technical committee of the War Department urged the necessity of such a specification and instanced its need in the transportation service in the northern part of the United States, for service in which there was much stopping and starting and for the fire engine service in the District of Columbia, to which he was charged with furnishing motor supplies.

Captain Rutten claimed that the Government under its specifications for gasoline is not receiving as high volatile motor fuel as is sold by oil companies during the winter at service stations. He claimed that at the White House garage in this city a motor fuel was available at a lower price and with higher volatility than that supplied to the Army under government specifications. He declared that the Government could not avail itself of the opportunity to purchase special brands of gasoline because the law provided that all such supplies should be obtained under government specifications.

There was no opposition on the part of the representatives of the oil industry to having the Government furnished with any grade of motor fuel it might desire but it was pointed out that if government specifications provided for a grade of gasoline known as "winter gasoline" it would be only a short time before state legislatures would require that same grade during certain months of the year and would make it mandatory that none other should be used during such portion of the year. It was thought that this would be done regardless of the section of the country effected and regardless of the fact that throughout the southern states the present government specifications for motor fuel are entirely satisfactory.

Dr. H. C. Dickinson of the Bureau of Standards, speaking for the specifications board, assured the industry that there was no desire to force upon them the necessity of supplying a winer motor fuel as distinction from the present grade of gasoline, and in order to avoid that dilemma the conference adopted a motion offered by T. G. Delbridge of the Atlantic Refining Co. which provided that this motor fuel should be called "Motor Fuel V," omitting a reference to gasoline in the name.

No Agreement

After a very general discussion it was found impossible to reach an agreement acceptable to Doctor Dickinson and representatives of the industry, so an arrangement was made by which a private conference was to be held with Doctor Dickinson and Captain Rutten representing the specifications board and T. G. Delbridge, K. G. Mackenzie of The Texas Company and George G. Brown of the Natural Gasoline Association of America in an effort to reach a tentative agreement to be presented to the specifications board for its approval. This meeting being held at the Bureau of Mines today, the members finally got together on a plan for a more highly volatile motor fuel for the special use of the Army and the Navy, to provide for quick starting under special conditions with the understanding that it was not an appropriate specification for general use. In the near future the specifications board will take up the consideration of this problem and endeavor to prescribe a motor fuel with name and quality to adapt it to the army transportation trucks operated under special conditions which are not found in the ordinary operation of motor cars.

The meeting, which was held at the New Willard Hotel, was called to order by Dr. R. P. Anderson, technologist of the American Petroleum Institute. Dr. H. C. Dickinson discussed the proposed changes in gasoline specifications and he explained that while the Government and many large consumers purchase commodities by specifications that practice does reduce competition in quality.

Government Viewpoint

"The present gasoline specification has been in force without modification for about six years, except for the omission of the color requirement," said Doctor Dickinson. "In the meantime, radical changes have taken place in the motor fuel industry. Gasoline is no longer merely gasoline, but may be any of many trademarked products. Moreover, these products actually differ in quality as well as in price. Advertising has created a demand for qualities with which the purchaser formerly was not concerned. Naturally, government purchasers require what the public does. Changes in the commercial gasoline during the past few years have been due partly to purely commercial conditions and partly to important advances in our knowledge of what is a good gasoline. Intensive research by the industry and the Government has led to important new facts. Some of these are as follows:

"The temperature of complete volatility, i.e., the dew point, is determined by the 90 per cent point of the A.S.T.M. distillation curve. The endpoint in this distillation has no significance. Thus the 90 per cent point alone tells all that is necessary to know as to the upper portion of the distillation curve.

"The temperature of initial volatility, i.e., the bubble point, is determined by the 10 per cent point of the A.S.T.M. distillation. The initial boiling point has no significance in this respect. Thus the 10 per cent point alone is a satisfactory criterion of the starting characteristics of a gasoline.

"The volatilities of any series of gasolines at any intermediate percentage evaporated are in the same order as the A.S.T.M. distillation temperatures at the same percentage evaporated.

"A.S.T.M. distillation temperatures (particularly in the lower portion of the range) are more significant when corrected for distillation loss.

"On the basis of these facts, specifications of temperature at 10 per cent, 90 per cent, and at some intermediate point, such as 50 per cent, preferably corrected for loss, suffice for a complete practical specification as regards the volatility of a gasoline.

"Confining our attention for the present to U. S. Motor gasoline, the proposed temperatures at these three points are based largely on the work of the Bureau of Standards and on the experience of the government departments using fuels of known characteristics. The values at the 90 per cent, 50 per cent and 10 per cent points are considered in turn below.

"Under normal operation conditions, the 90 per cent point is a good indication of the tendency of the gasoline to dilute the crankcase oil. Experience has shown that it is not desirable to have the temperature at this point higher than 200 degrees Centigrade in the case of U. S. Motor gasoline. No change is suggested.

"The relation, if any, between acceleration performance and the middle part of the A. S. T. M. curve is being investigated at the present time by the bureau, and tentatively the previous maximum of 140 degrees C at the 50 per cent point has been left unchanged.

"The engine starting tests conducted by the bureau have shown that the 10 per cent point is the best single indication of the ease of starting. Quantitative evaluation of the test results has made it possible to estimate the A. S. T. M. temperatures at 10 per cent evaporated required for starting at various atmospheric temperatures. On this basis, a maximum of 80 degrees Centigrade has been proposed for U. S. Motor gasoline. The 10 per cent point replaces the initial boiling point, which is inaccurate and not significant, and the 20 per cent point which is unnecessary if the 10 per cent point is specified.

"Up to this point the effect of the proposed changes is only to allow more flexibility by dropping the initial, 20 per cent and the end points, and substituting the 10 per cent point. It is recognized that some refiners may oppose the lifting of these limits, because their presence in the specifications has cramped some of their competitors. There seems to be no justification whatever for retaining specification requirements which artificially and unnecessarily limit free competition.

"The 10 per cent point is placed a little lower than would be required by the old specification, but a careful survey of commercial products has shown that practically none of them will be affected by this change. On the other hand, as will be shown later, government purchasers have been compelled to accept on the old specification gasolines which were unsatisfactory and which would not be accepted by the public.

"The one important change in the specification is the addition of a lower limit on the 10 per cent point. This has been made necessary by changes in re-

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GOVERNMENT PROPOSES CHANGES IN U. S. MOTOR WITH ADDITIONAL GRADE

Proposed Revision of Page 2 of F.S. B. 2d.

United States Government Motor Gasoline

1. This specification covers the grade of gasoline used by the United States Government and its agencies as a fuel for automobile, truck, tractor, motor boat, and similar engines.

2. Gasoline purchased under this specification shall be described as "U. S. Government Motor Gasoline" with the understanding that this designation always refers to the current specification of the Federal Specification Board.

3. The gasoline shall be free from water and suspended matter.

Properties and Tests

4. Sampling—Samples shall be taken according to the procedures described in Part 3 of this paper.

5. Corrosion Test—Method 530.22. A clean copper strip shall not show more than extremely slight discoloration when submerged in the gasoline for three hours at 122 degrees F.

6. Distillation Range—Method 100.13. When 10 per cent has been recovered in the receiver, the thermometer shall not read more than 80 degrees C. (176 degrees F.) nor less than 60 degrees C. (140 degrees F.). (See Appendix for later revision of this item by Technical Committee on Lubricants and Liquid Fuels.)

When 50 per cent has been recovered in the receiver, the thermometer shall not read more than 140 degrees C. (284 degrees F.).

When 90 per cent has been recovered in the receiver, the thermometer shall not read more than 200 degrees C. (392 degrees F.).

At least 95 per cent shall be recovered as distillate in the receiver from the distillation.

7. Sulphur—Method 520.11. Sulphur shall not exceed 0.10 per cent.

8. All tests shall be made according to the methods for testing contained in Part 2 of F.S.B. Specification No. 2d (Bureau of Mines Technical Paper 323B).

(Proposed)

United States High Volatility Gasoline

1. This specification covers the grade of gasoline used by the United States Government and its agencies as a fuel for automobile and similar engines under exceptional and special conditions where a fuel more volatile than U. S. Government Motor Gasoline is required.

2. Gasoline purchased under this specification shall be described as "U. S. High Votality Gasoline" with the understanding that this designation always refers to the current specification of the Federal Specification Board.

3. The gasoline shall be free from water and suspended matter.

Properties and Tests

4. Sampling—Samples shall be taken according to procedure described in Part 3 of this paper.

5. Corrosion Test—Method 530.22. A clean copper strip shall not show more than extremely slight discoloration when submerged in the gasoline for three hours at 122 degrees F.

6. Distillation Range—Method 100.13. When 10 per cent has been recovered in the receiver, the thermometer shall not read more than 70 degrees C. (158 degrees F.), nor less than 50 degrees C. (122 degrees F.). (See Appendix for later revision of this item by Technical Committee on Lubricants and Liquid Fuels.)

When 50 per cent has been recovered in the receiver, the thermometer shall not read more than 125 degrees C. (257 degrees F.).

When 90 per cent has been recovered in the receiver, the thermometer shall not read more than 180 degrees C. (356 degrees F.).

At least 95 per cent shall be recovered as distillates in the receiver from the distillation.

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Narrow Tank Car-Tank Wagon Spread

Next Probable Step After Adoption of Code of Ethics in Marketing Practices. Economies to Keep Down Cost

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Mar. 18.—With competitive conditions in gasoline marketing operations already showing improvement as leading interests in the industry indicate their approval of and adherence to the new code of ethics, it is believed the next great co-operative movement in oil marketing will be in the direction of a definite move to narrow the spread between tank car and tank wagon prices.

Always a live topic among refiners and marketers, the differential between tank car and tank wagon quotations is scheduled to come in for intensive study and it is believed definite progress will be made in developing greater economies in the marketing end.

At various times it has been suggested that the American Petroleum Institute take the initiative in conducting a survey into this price spread. Some time ago it appeared the institute was about to start a research program in this direction, but the code of ethics came up, and interest in the code superseded, temporarily at least, that shown in the tank wagon situation. It is believed, however, that once the code of ethics is thoroughly established and in operation, the institute may turn its attention to other problems in marketing operations, and that the differential between the tank car and tank wagon gasoline price basis will be the first subject for consideration. It is considered possible that the aid of the Department of Commerce may be involved in such an undertaking. That department has been quite active during the past year or so in rendering assistance along similar lines to other industries which have shown an inclination to probe into their marketing problems to eliminate shortcomings and further economic distribution and as a result of these activities, the Commerce Department now has a number of men thoroughly experienced in this type of work.

Cost Factors

There are a number of important cost factors that enter into the spread between tank car and tank wagon quotations, and while these factors are well recognized it is the feeling among many executives that corrective measures may be taken to eliminate some of these costs and develop added economies in others. The excessive competition which has been waged in gasoline marketing operations for several years has tended to add materially to costs of distribution. While it would, of course, not be possible to do away with all of these expenses overnight, the gradual realignment of marketing policies in line with the provisions of the code of ethics is expected to do much to lighten the overhead in distribution.

Leading companies in the East have given considerable thought to narrowing the spread between refinery gasoline prices and those charged consumers. Standard Oil Co. of New Jersey has been prominent among these, and several months ago established an aribitrary differential of 2 cents on its price basis; that is, a filling station basis 2 cents over its tank wagon quotation. A number of other large companies in the East which have hitherto maintained only a tank wagon schedule, and left the retail price to their distributors to establish, have likewise shown a tendency to make and maintain a 2 cents differential.

Six months ago any attempt by the large companies to hold down the price charged consumers for motor gasoline would have resulted inevitably in the loss of considerable gallonage. With the code of ethics in effect, the companies are now in position to take definite steps to hold down the retail price of gasoline, with reasonable certainty of holding their distributive outlets.

Fight for Gallonage

Much of the spread between refinery and tank wagon prices has been due to the fight for gallonage which has been waging incessantly for several years. This struggle necessitated the granting of many special privileges to distributors and many uneconomic practices crept into the industry in consequence.

At present, there is an average differential of 6¾ cents between the tank car price at refineries and the tank wagon quotation in the local territory. Freight rates account for from 1 to 2 cents of this spread. At the maximum allowance for freight there still remains a difference of 4¾ cents, and this spread is the target at which the companies will be aiming in their activities to further narrow the differential.

One of the most potent factors in increasing marketing expenses has been the enormous and expensive duplication of station equipment. Most of the large companies marketing gasoline have huge sums tied up in filling station equipment. Aside from its inventory value, much of this has been a direct liability to the companies in recent years, in as much as it represented an outlay of considerable capital, and has been producing no direct net revenue. This situation is the direct outgrowth of the keen competition and which necessitated the giving or loaning of equipment to retail distributors as part of the regular selling policy of the principal marketers. The provisions of the code of ethics will correct this situation, and automatically bring about some of the lowering in distribution costs which refiners and marketers have been seeking.

Increased Overhead

Another heavy item of overhead due directly to the fight for gallonage has been the overstaffing of the sales departments of some of the refining and marketing companies. With competing marketers constantly endeavoring to wean retail distributors from competitors, refiners' sales departments have found it necessary to keep a large force of men in the field to watch for this type of competition and overcome it. Consequently, it has been necessary not only to "sell" a new account, but to contact every account constantly to hold it. Necessarily, the sales departments of marketing organizations were forced to augment their force of salesmen greatly, and the resulting increase in overhead has been by no means insignificant. A number of sales departments, therefore, will find themselves greatly overstaffed once the benefits of the new code of ethics make themselves fully apparent, and it is expected pruning of sales forces will be one of the first steps in the campaign to lower distributing costs.

One of the principal factors in making for new economy in gasoline marketing operations, it is expected, will be the development of the oil company-owned filling station chains. Most of the leading companies operating in the East have been giving this situation serious consideration during the past few years, and several have made important progress in augmenting their chains of stations. Up to within six months or so ago, many marketers were not in financial position to carry out their plans for acquisition of retail stations, owing to the necessity of carrying larger than usual cash reserves to meet unexpected contingencies. During the closing half of 1928, however, and thus far in 1929, the position of the marketing companies has undergone a marked change for the better, from a financial standpoint, and many of the companies have now embarked upon their program of building up systems of directly owned retail sales stations. It is expected the remainder of 1929 will witness further important developments along these lines.

Operation of company-owned stations is generally recognized as the industry's best weapon in keeping down costs to the consumer, and at the same time getting a fair return for the refining and distributing of gasoline. Control of a large number of retail stations gives the marketer the power of not only naming a retail price, but enforcing it as well. In addition, operation of such chains gives the large companies an assured outlet for a fixed proportion of their gasoline production, and simplifies marketing the remainder in the tank car jobbing market.

Chain Stations

In addition to assuring refiners and marketers a fair return on refining and distributing costs, maintenance of company-owned stations has been an important factor in tending to stabilize the gasoline situation in many parts of the country. The high costs built up around tank wagon distribution during the past several years, and the extensive spread between tank car and tank wagon prices, has given many small independent marketers an unusually wide margin of profit to work on. In most cases, the small operators have preferred not to take their margin, but have embarked upon expansion programs, utilizing the wide profit margin as a weapon in a price cutting campaign designed to undermine the position of some of the larger distributing units. While executives of the large companies have recognized this as being but a temporary condition, they have neverthless been forced to meet virtually all of this price cutting to hold their gallonage. In consequence, gasoline markets have shown violent disturbances frequently during the past several years. A definite indication of a turn for the better in this respect was recently seen in New York, however. Municipal Service Corp., a strong local independent, and Warner-Quinlan Co. being involved in a price war. This "war" although short lived, was one of the most drastic ever seen in the East, the retail price of gasoline being dropped 8 cents over night by the two companies. The start of this local disturbance was expected to herald the advent of a general "war" among all marketers in the area, as had been the case with similar disturbances for a number of years previously. Instead, however, large interests in the metropolitan territory refused to meet this competition, and the price war remained strictly localized. Within a few weeks, it had subsided, and both companies were back close to their old retail price schedules, slightly under those of the principal factors in the New York City trade.

Better Quality

Another indication of the efforts of the large gasoline refining and marketing companies to give the consumers a lower price on their motor fuel, and one which has not received much publicity, is the

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CALIFORNIA OPERATORS PREPARE AMENDMENT TO STATE MINING ACT

LOS ANGELES, Calif., Mar. 18—The California Independent Oil Producers, a mutual organization of comparatively recent orogin and in no way connected with The Independent Oil Producers Agency, which was organized some twenty years ago, has prepared an amendment to the act which created the California State Mining Bureau and a concerted effort will be made to secure its passage or incorporate its fundamental principles into the proposed legislative action sponsored by the regional committee of the American Petroleum Institute. The bill, as prepared, has already been forwarded to Governor Young for his consideration in order that he may be given the option of introducing it as an administration measure if he so chooses.

Section three of the bill sponsored by the California Independent Oil Producers provides that:

"It shall be the duty of the State Oil and Gas Commission to so supervise drilling operation, maintenance, and abandonment of petroleum or gas wells in the State of California as to prevent waste. The term waste in addition to its ordinary meaning shall include damage to underground petroleum and gas deposits from infiltrating water; escape into the open air of natural gas except as may be necessary in the drilling or operation of an oil well; underground waste; allowing any natural gas well to wastefully burn; creation of unnecessary fire hazards; the wasteful utilization of oil or gas either by overproduction or disproportionate use or otherwise.

"Subject only to the following prohibitions and limitations: "The commission shall have power to establish and publish such rules and regulations as will be necessary or proper to perform its duties.

"In the case of any well, capable of producing both oil and natural gas the commission shall have power to restrict the production of a natural gas below an amount which shall produce the maximum amount of oil per acre during the estimated oil productive life of said well provided that this subdivision shall not prevent further restrictions on the production of oil to prevent wasteful utilization thereof.

"For the purpose of preventing wasteful utilization of gas no restriction shall be placed upon the production of gas from a well capable of producing both oil and gas as long as gas is allowed to be produced from wells capable of producing gas only.

"For the purpose of preventing wasteful utilization of gas all rules and regulations shall be statewide in character and for this purpose the commission shall have no power to differentiate between either separate producing structures or between separate gas fields or between separate strata or sands in the some producing structure.

"For the purpose of preventing wasteful utilization of oil all rules and regulations shall be statewide in character and for this purpose the commission shall have no power to differentiate between either separate producing structures or between separate oil fields or between separate strata or sands in the same producing structures."

Comparison of Mid-Continent Crudes

Explain Relative Refining Value of Oklahoma and Pecos County, Texas, Crude Oils in Three Types of Operation

By Sidney Born*
Transcontinental Oil Co.

In determining the relative value of two crude oils, it is necessary to take into consideration not only the analysis of the material, that is, the break-up or ultimate yield of products obtainable from each crude oil, but also the market prices obtainable for these products at the point at which the crude oil is to be refined, refining costs, transportations and gathering charges on the crude itself, and various other factors which we will attempt to bring out in this paper.

The yield of products obtainable from any crude oil is dependent not only on the nature of the crude itself, but is somewhat determined by market conditions, that is, whether it is more profitable to run the crude to lubricating stock, to fuel oil or to crack a portion of these products and convert them into gasoline is a question which must be decided by taking into consideration the market conditions, refining costs and similar factors. In order to bring out these points more fully, we will, in the latter portion of this paper, give a number of realizations based on running these crude oils in various ways, and in order to make these more applicable to the discussion at hand, we have based all of the realizations on today's market prices.

Major Differences

There are two major differences between Mid-Continent crude and West Texas crude which affect not only the yield of products obtainable from each of these crudes, but the characteristics of the products obtainable differ materially from each other.

We have used as a typical West Texas crude an average crude from the Yates Pool in Pecos County, Texas. A detailed discussion of this crude was given by the writer under the title "Refining of Pecos County, Texas, Crude Oil" before the American Petroleum Institute in Chicago last December. Summarizing from this paper we give the accompanying analysis of the Pecos County crude.

TESTS ON PECOS COUNTY CRUDE

Gravity	29.6°
B.s. and water	None
Sulphur	1.55%
Pour test	0° F.
Viscosity Saybolt Universal at 100° F.	61

Mid-Continent Crude

Crude from the Hendricks Pool in Winkler County is very similar to the Yates crude in its general properties. For comparison with the West Texas crude we have selected as a typical Mid-Continent crude a crude having an A.P.I. gravity of 30 and representative of crude found in various parts of Tulsa, Creek and Okmulgee Counties. While we must necessarily limit ourselves to a crude of the same gravity as the West Texas crude in this discussion, one can make a similar comparison with any other gravity Mid-Continent crude by using the proper realization based on the yield of the various products obtainable from the crude.

In making the comparison between these two different types of crude oil, we have considered running the Mid-Continent crude at some point in the Mid-Continent Field, using a transportation and gathering charge of 20 cents per barrel. It may not cost this much for some oil companies to transport their crude from the field to the refinery, and in other cases the cost may exceed this figure, but we believe that 20 cents per barrel represents a good average figure for use in this connection.

In computing realizations from the Pecos crude oil, we have considered the possibility of refining this crude at two different points. One in West Texas close to producing fields, in which realizations we have used 20 cents per barrel gathering and transportation charge, and refined oil prices based on prevailing market prices for these products in West Texas as of March 1. We have also considered the possibility of transporting this crude to the Gulf and refining at that point, and in this set of realizations we have used a gathering and transportation charge of 57½ cents per barrel, and the prevailing market prices for refined products as of March 1 at the Gulf Coast. The manufacturing cost includes all operating and maintenance charges and depreciation on investment, but no interest on capitalization or sales expense.

The following figures have been used for manufacturing costs: Skimming West Texas crude, 10 cents per barrel; skimming and cracking, 25 cents per barrel; skimming and producing lubs, 17 cents per barrel; cracking and producing lubs, 30 cents per barrel.

*Manufacturers meeting, Western Petroleum Refiners Association, March 12.

TESTS ON PECOS COUNTY CRUDE

SIMPLE DISTILLATION

Product—	%	Grav.	I.B.P.	20%	50%	90%	M.B.P.	Flash	Fire	Pour test	Visc.	Sulphur	Color
Naphtha	25.00	54.8	140	226	284	366	430	...	...	...	...	...	...
Burn. oil	5.80	39.3	...	...	...	...	...	150	180	...	...	...	...
Gas oil	11.30	34.8	...	...	...	...	...	185	215	...	...	.805%	...
Hy. dist.	28.50	25.7	...	...	...	...	...	280	325	Below 5° F.	72	1.708%	4½
Fuel oil	26.70	14.9	...	...	...	...	...	520	600	...	467	2.950%	...
Loss	2.70												

RUNNING TO 300 VISCOSITY LUBS

Product—	%	Grav.	I.B.P.	20%	50%	90%	M.B.P.	Flash	Fire	Pour test	Visc.	Sulphur	Color
Naphtha	25.00	54.8	140	226	284	366	430	...	...	...	...	...	...
Burn. oil	5.80	39.3	...	...	...	...	...	150	180	...	...	...	...
Gas oil	28.10	29.7	...	...	...	...	...	225	265	...	...	...	...
300 neut.	15.00	22.6	...	...	...	...	...	390	460	Zero	300	.....	3½
Hy. neut.	8.70	21.3	...	...	...	...	...	515	600	10°	90@210°	.....	5 red
Asphalt	15.00	...	...	...	...	...	...	580	690	...	...	...	...
Loss	3.40												

RUNNING TO 500 VISCOSITY LUBS

Product—	%	Grav.	I.B.P.	20%	50%	90%	M.B.P.	Flash	Fire	Pour test	Visc.	Sulphur	Color
Naphtha	25.00	54.8	140	226	284	366	430	...	...	...	...	...	...
Burn. oil	5.80	39.3	...	...	...	...	...	150	180	...	...	...	...
Gas oil	29.50	29.0	...	...	...	...	...	230	275	...	...	...	...
500 neut.	22.30	22.3	...	...	...	...	...	425	480	0°	500@100°	.....	Red
Asphalt	15.00	...	...	...	...	...	...	580	690	...	...	...	...
Loss	3.40												

REALIZATIONS RUNNING PECOS CRUDE OIL AT GULF POINTS, MARCH 1, 1929

Skimming Pecos Crude

Gasoline	24.00%	$0.0850	$2.04
Kerosene	6.00	.0675	.41
Fuel oil	42.00	.0167	.70
Gas oil	25.00	.03875	.97
Loss	3.00		
Relization per 100 gallons			$4.12
Realization per barrel			1.73
Crude oil cost		$0.65	
Refg. and deprec.		.10	
P. L. gath. and transp.		.575	1.325
Profit per barrel			$0.405

Skimming and Cracking

Gasoline	42.00%	$0.0850	$3.57
Kerosene	9.00	.0675	.61
Fuel oil	44.00	.0167	.74
Loss	5.00		
Realization per 100 gallons			$4.92
Realization per barrel			2.07
Crude oil cost		$0.65	
Refg. and deprec.		.25	
P. L. gath. and transp.		.575	1.475
Profit per barrel			$0.595

Cracking and Producing Lubs

Gasoline	31.50%	$0.0850	$2.68
Kerosene	9.00	.0675	.61
Z. pale and red	16.00	.10	1.60
Fuel oil	37.00	.0167	.62
Loss	6.50		
Realization per 100 gallons			$5.51
Realization per barrel			2.31
Crude oil cost		$0.65	
Refg. and deprec.		.30	
P. L. gath and transp.		.575	1.525
Profit per barrel			$0.785

Skimming and Producing Lubs

Gasoline	24.00%	$0.0850	$2.04
Kerosene	6.00	.0675	.41
Gas oil	25.00	.03875	.97
Z. pale and red	16.00	.10	1.60
Fuel oil	24.00	.0167	.40
Loss	5.00		
Realization per 100 gallons			$5.42
Realization per barrel			2.28
Crude oil cost		$0.65	
Refg. and deprec.		.17	
P. L. gath. and transp.		.575	1.395
Profit per barrel			$0.885

REALIZATIONS RUNNING PECOS CRUDE OIL AT WEST TEXAS POINTS, MARCH 1, 1929

Skimming Pecos Crude

Gasoline	24.00%	$0.06125	$1.47
Kerosene	6.00	.04375	.26
Fuel oil	42.00	.0083	.35
Gas oil	25.00	.02875	.72
Loss	3.00		
Realization per 100 gallons			$2.80
Realization per barrel			1.18
Crude oil cost		$0.65	
Refg. and deprec.		.10	
P. L. gath. and transp.		.20	.95
Profit per barrel			$0.23

Skimming and Cracking

Gasoline	42.00%	$0.06125	$2.57
Kerosene	9.00	.04375	.39
Fuel oil	44.00	.0083	.37
Loss	5.00		
Realization per 100 gallons			$3.33
Realization per barrel			1.40
Crude oil cost		$0.65	
Refg. and deprec.		.25	
P. L. gath. and transp.		.20	1.10
Profit per barrel			$0.30

Cracking and Producing Lubs

Gasoline	31.50%	$0.06125	$1.93
Kerosene	9.00	.04375	.39
Z. pale and red	16.00	.10	1.60
Fuel oil	37.00	.0083	.31
Loss	6.50		
Realization per 100 gallons			$4.23
Realization per barrel			1.78
Crude oil cost		$0.65	
Refg. and deprec.		.30	
P. L. gath and transp.		.20	1.15
Profit per barrel			$0.63

Skimming and Producing Lubs

Gasoline	24.00%	$0.06125	$1.47
Kerosene	6.00	.04375	.26
Gas oil	25.00	.02875	.72
Z. pale and red	16.00	.10	1.60
Fuel oil	24.00	.0083	.20
Loss	5.00		
Realization per 100 gallons			$4.25
Realization per barrel			1.79
Crude oil cost		$0.65	
Refg. and deprec.		.17	
P. L. gath. and transp.		.20	1.02
Profit per barrel			$0.77

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ESTABLISH SPECIFICATIONS FOR SPECIAL GRADE OF MOTOR FUEL

By Charles E. Kern

WASHINGTON, D. C., Mar. 19.—The technical committee today placed its recommendations for a new motor fuel to be known as Motor Fuel V before the specifications board which is equivalent to their adoption. The board did not receive these recommendations until its meeting had been adjourned and for that reason no action was taken on them.

A change is made from the December 31 recommendation to provide that for each per cent distillation loss less than 4 per cent obtained in the A.S.T.M. distillation the minimum 10 per cent temperature required shall be lowered 3 degrees Centigrade or 5 4/10 degrees Fahrenheit. Another change shows that this specification covers the grade of fuel used by the United States Government and its agencies for motor vehicles and similar engines under special conditions where a fuel less volatile than domestic aviation fuel is satisfactory.

This change is also applied to United States Government motor gasoline. The distillation method 100.13 is also modified.

The other percentages of recovery are similar to the recommendations of December 31, when 50 per cent has been recovered in the receiver the thermometer shall not read more than 257 degrees Fahrenheit and when 90 per cent is recovered 356 degrees Fahrenheit.

Not for General Use

It is distinctly understood that this specification relating to the new Motor Fuel V is for special uses by the Army and other branches of the Government and has no general application. This United States Government master specification for lubricants and liquid fuels is a proposed revision of page 2 of F.S.B. second, the complete report being as follows:

United States Government Motor Gasoline. 1. This specification covers the grade of gasoline used by the United States Government and its agencies as a fuel for automobile, truck, tractor, motor boat and similar engines.

2. Gasoline purchased under this specification shall be described as "United States Government motor gasoline" with the understanding that this designation always refers to the current specification of the federal specifications board.

3. The gasoline shall be free from water and suspended matter.

Properties and tests:

4. Sampling—Samples shall be taken according to the procedures described in part 3 of this paper.

5. Corrosion test—Method 530.22. A clean copper strip shall not show more than extremely slight discoloration when submerged in the gasoline for three hours at 122 degrees Fahrenheit.

6. Distillation Range—Method 100.13. When 10 per cent has been recovered in the receiver the thermometer shall not read more than 80 degrees Centigrade (176 degrees Fahrenheit) nor less than

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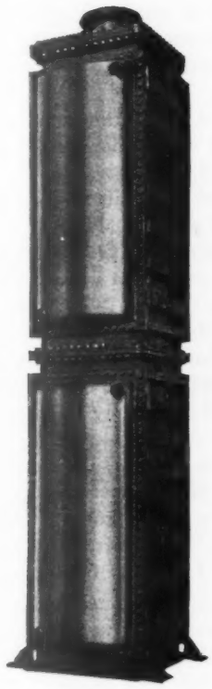

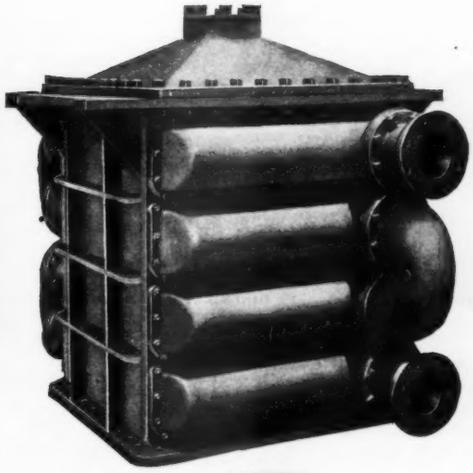

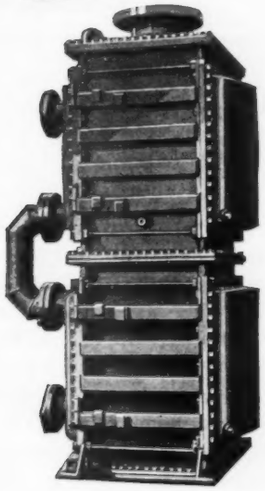

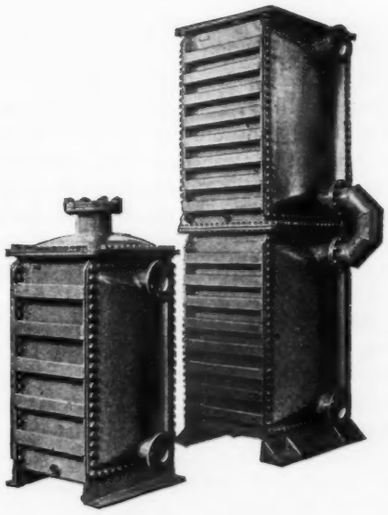

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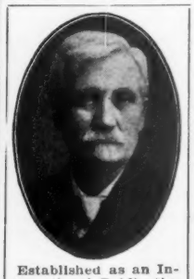

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THE PEAK OF PRODUCTION

The suggestion that crude oil production this year should not exceed that of 1928, approved by the General Committee of the American Petroleum Institute at Houston, has led to the further idea that production should be held to that figure indefinitely so long as unwieldy stocks menace the industry.

Some 21,000,000 barrels were added to stocks last year, indicating that 1928 production was that much in excess of demand.

Increased efficiency in gasoline recovery took the place of 30,000,000 barrels of crude last year.

So far this year there is every indication of a similar increase in the percentage of gasoline recovery during 1929 taking the place of another 30,000,000 barrels of crude.

The fact that domestic consumption is showing a lesser percentage and volume of increase from year to year has been noted.

Stocks are at their highest point and being added to steadily.

With these facts in mind it is clear that 1928 production can be taken as a liberal limit not only for production this year but for years to come because the percentage of gasoline recovery, including natural gasoline, can be increased from the present 43 per cent to 50 per cent or even more, while greater efficiency in automotive engines and use of oil now being sold for less valuable purposes will continue to keep down the demand for crude.

But, far from being a pessimistic picture for the oil industry, this development, properly taken advantage of, should guarantee stabilization and prosperity.

That is apparently the view taken by the committees which met at Houston upon the call of President E. B. Reeser of the institute.

It was the keynote sounded in the address of Chairman R. C. Holmes which stressed the reduction of stocks.

The cost to the industry of storing and carrying the excess stocks which would accumulate at the present rate of production would be a staggering burden, but more than that would be the depressing influence on market values of this overhanging surplus.

The first necessity is to keep current production in line with demand and next to keep it down sufficiently to reduce this surplus.

Consequently leaders in the industry look beyond the present year and see that 1928 production should stand as the peak.

With the present immense surplus above ground, with gasoline recovery increasing every year, with improved motors giving greater mileage, the overabundant crude production in 1928 offers a generous standard of supply.

Startling though it may seem to some, this conclusion was anticipated as long ago as the report of the Committee of Eleven to the Federal Oil Conservation Board.

In that report a curve was shown calculating the maximum and minimum demands for crude for 50 years.

The maximum estimated for 1930 was 1,036,000,000 barrels on a gasoline yield of 33 per cent. The minimum was estimated at 335,000,000 on a gasoline yield of 55 per cent.

The maximum demand for gasoline was estimated at 315,000,000 barrels, allowing a little over 10 barrels a year to each car. The minimum was estimated at 157,000,000 barrels, or half the maximum based on a possible doubling of the efficiency of motors and more economical utilization of oil.

Actually the total demand (minus exports) for gasoline this year has been put at 410,000,000 barrels. Now 43 per cent gasoline recovery on last year's crude production would come within 20,000,000 barrels of supplying that demand and a draft of 20,000,000 barrels from our present stocks of oil would scarcely be noticed.

Three months of this year have already gone, during which there has been steady accumulation to storage. Any effort to keep this year's production down to last year's figures will have to include a reduction for the rest of the year sufficient to offset the additions to stocks since January 1.

No elaborate calculation is required to see that it would be several years, on the basis of 1928 production of crude, before any appreciable dent would be made in our existing surplus.

Yet behind that is the probability of 50 per cent gasoline recovery, or even more, and the prospective doubling of efficiency and mileage by improved motors and the availability, as a source of gasoline, of fuel oil now being used in competition with coal on a price basis, an economic waste that is utterly indefensible.

The demand for petroleum products will grow constantly as the world becomes motorized and as aerial transportation is added to automobile demand, and machines take the place of manual labor in industry in the more backward countries.

But the oil industry is today so far ahead of prospective demand in its supply that it can take care of all demands with proportionately less crude.

The irony of the situation is that this superefficiency in overproduction has brought down the price of oil far below its real value to the industry or to the consumer.

The industry upon which the country depends for this indispensable power is being crippled by this condition. This invaluable and irreplacable natural resource is being wasted through unnecessary depletion and less efficient utilization.

A definite limitation of production in line with demand, approved and put into effect by the entire industry, will assure the consumer a stable supply at a reasonable cost without the wild fluctuations that have confused and irritated the public, will permit the industry to put into effect economies and increase efficiency that will establish the business on a sound foundation, and will save hundreds of millions of barrels for our future needs.

There is no longer any question of public and governmental approval of the industry's efforts to conserve our oil supply. The five years' campaign of education has borne fruit.

The speed with which the General Committee representing all sections of the oil country reached its conclusions at Houston reflected the practically unanimous conversion of the industry to belief in co-operation.

The American Petroleum Institute is now functioning 100 per cent. It is grappling with the problems of the industry energetically and, above all, promptly. Questions are being taken right out to the industry, discussed frankly and acted upon with decision.

As a result of the Houston meeting the industry is in better position than it has been for years because it got down to fundamentals and faced the facts.

Ask a Man Who Knows!

Mr. Frank N. Smith has been associated with the Dresser business for thirty-six years.

His experience and personal knowledge of early installations, their operating conditions and all such details, as well as his long experience in the Dresser factories, qualify him as an expert in the design, production and application of Dresser couplings.

Now, as Ever

DRESSER Couplings Dominate

S. R. DRESSER MANUFACTURING CO.
BRADFORD, PENNA.

PRAIRIE AND T. B. SLICK IN DEAL INVOLVING MANY MILLIONS

A deal involving between $25,000,000 and $30,000,000 in which the Prairie Oil & Gas Co. is buying oil and gas properties of Thomas B. Slick and Tom Slick, Inc., is in the last stages of negotiations. Nothing remains but scattered legal details and the actual payment of the purchase price, which has been reported all the way from $25,000,000 to $40,000,000, but which The Oil and Gas Journal understands is below $30,000,000.

The properties Mr. Slick is selling include about 300 oil wells producing approximately 27,000 bbls. per day, net, of high grade crude and a half interest in over 500,000 acres of nonproducing acreage most of which lies in Creek, Seminole, Pottawatomie, Logan, Lincoln, Cleveland, Oklahoma, Garfield, Noble and Kay Counties in Oklahoma; Sedgwick, Butler, Greenwood and Cowley Counties in Kansas, and in Eastland, Brown and Coleman Counties in Texas. The Prairie Oil & Gas Co. is to have control of the nonproductive properties. It will be in charge of exploration and development work on them and will have the right to purchase all Mr. Slick's share in the oil produced on any or all of them.

The most productive of the Slick leases are those in the St. Louis and Seminole Fields in Oklahoma, but Mr. Slick's production in the Tonkawa Field, Cowley County, Oklahoma, and Sedgwick County, in Kansas, and in the Pioneer Field in Brown County, Texas, together with any other producing interests he may have in the three states, are included in the trade. The Oklahoma properties produced 5,539,039 bbls. net in 1928 of which 576,218 bbls. were produced in the first quarter; 704,467 bbls. in the second quarter; 1,805,929 bbls. in the third quarter and 2,452,425 bbls. in the fourth quarter.

Three Million Barrels in Storage

Mr. Slick has about 3,000,000 bbls. of high grade oil in steel storage in the general Seminole district and this oil, and the tanks, is a part of the transaction.

This is the second important sale of oil properties Mr. Slick has made to the Prairie Oil & Gas Co. He sold out all his Cushing interests for a sum reported to have been $9,000,000 about 14 years ago. Just previous to that purchase the Prairie had bought out Slick's partners, B. B. and R. B. Jones for $8,000,000.

The deal just closing is the largest transaction of its kind since the McMan Oil & Gas Co. sold its properties to the Magnolia Petroleum Co. for $36,000,000 in 1916. It transcends the Waite Phillips sale to a syndicate of New York bankers at a price reported to have been $23,000,000.

The addition of 27,000 bbls. of daily net production will give the Prairie Oil & Gas Co. a total net production in three states, Kansas, Oklahoma and Texas of about 100,000 bbls. a day, and it takes off the crude market the largest quantity of so-called "free oil"—oil produced by an operator without any direct refinery or broker connections—in Oklahoma.

Thomas B. Slick has for some time had the distinction of being the largest individual producer of oil in the world. He has for 15 years or more been regarded as one of the boldest and shrewdest oil operators in the industry, a wildcatter extraordinary who was willing to back his judgment with his last available dollar. His record of being right is unsurpassed in the Mid-Continent Field.

The disposal of his producing properties was done because Mr. Slick believed he had earned a rest from the tremendous labor and care of operating in oil on such a large scale. He has other interests besides oil, among them being a large traction system and he will have enough work to do to keep him from accumulating rust. That Mr. Slick had no intention of withdrawing from the oil business is shown by the fact that he retained a half interest in the nonpro-

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High Spots in Field News

MICHIGAN

Six new wells at Muskegon add nearly 10,000 bbls. Mount Pleasant Field center of activity.

ARKANSAS

Probable new pool opened in South Arkansas between Louann light oil district and Smackover.

NEW MEXICO

Marland-California No. 1 Lockhart made 338 bbls. while cleaning out, best reported since well was shot.

SOUTHWEST TEXAS

Northeast end of Joe Bruner Pool has good completions. Good well in Schoolfield-O'Byrne Field, Duval County.

KANSAS

Well in Wright Pool placed on pump after it had stopped flowing naturally offers a definite idea of possibilities of that particular spot.

NORTH TEXAS AND PANHANDLE

Downpour furnishing water starts 100 idle rigs in Wichita Falls district.

Another good well in Bulcher Pool.

ROCKY MOUNTAIN AREA

Vineland operations, south of Pueblo, Colo., holding popular attention.

Wellington Dome extended quarter mile south.

CALIFORNIA

Deeper drilling controversy in California. Efforts being made to limit operations in newly discovered horizons. Conservation legislation being urged by association of producers.

OKLAHOMA

Estimated that 120,000 bbls. of crude production is now shut in by proration in Oklahoma.

Oklahoma City well increasing its output and amount it is cutting. Gauge Tuesday was 2,630 bbls., cut 1.5 per cent.

GULF COAST

Well in Lost Lake Dome, Chambers County, Tennessee, has unusually heavy gas pressure.

Botney Bay well, St. Landry Parish, Louisiana, tests salt water. Originally flowed 500 bbls. and sanded.

Deep sand well in south Humble area flowed at rate of 1,000 bbls. an hour for three hours before sanding up.

WEST TEXAS

Hendricks Pool thought to be about three-quarters through with flush production and may be down to 100,000 bbls. within six months.

Sunday shut-down movement in Howard County where Roberts and Settles Pools report increase in potential.

Crude contracts feature of week's developments.

Ward County looking more promising.

Standard of Kansas Will Lay Pipe Line To Greenwood County

The Standard Oil Company of Kansas, which has a 15,000 bbl. refinery at Neodesha, Kas. will construct a 60-mile 6-inch pipe line from Neodesha to the Sallyards Pool in western Greenwood County.

It has contracted to buy 4,000 bbls. per day of crude oil from the Empire Gas & Fuel Co., and if the Empire cannot supply that quantity from its Greenwood County production it will lay a 4-inch line from Butler County to connect with the Standard's line and supply enough crude through it to make up any deficiency. From the size of the line to be laid it is evident that the Standard of Kansas will solicit oil from other operators in the Greenwood-Butler area. The crude produced there is all of high grade. Greenwood County oil averages 41 gravity and most of the Butler County crude runs from 34 to 39 gravity. The entrance of the Standard of Kansas as a buyer in that area will have a stimulating effect on the market as it cuts off some buyers already in the field from sources of their supply.

The Standard of Kansas has been getting most of its crude from the Prairie Oil & Gas Co. for many years.

ASK HOOVER FOR HEARING

Resolutions adopted by the directors of the Rocky Mountain Oil & Gas Association and wired to President Hoover requesting a hearing on the new conservation policy on the development of oil and gas lands in the Rocky Mountain region.

SEMINOLE POTENTIAL 480,522 BBLS. DAILY

Wells in the greater Seminole area of Oklahoma produced 480,522 bbls. during the 24-hour period from Saturday morning to Sunday morning, when opened to capacity to obtain potential production gauges to be used as the basis for fixing the allowed production percentage during the last half of this month. Production during this 24-hour period, by pools, follows:

	Bbls.
Seminole City	44,050
Bowlegs	46,273
Earlsboro	73,912
Searight	12,666
Little River	97,947
St. Louis	127,449
Maud	27,784
Mission	38,874
Carr City	11,567
Total	480,522

Based on this production, Ray M. Collins, umpire in charge of enforcement of the conservation plan, has announced the following percentages of potential production as allowable output:

Seminole City	75
Bowlegs	75
Earlsboro	75
Searight	75
Little River	75
St. Louis	73
Maud-Carr City	69
Mission	69

All drilling wells upon reaching the sand shall be required to shut down 12 days, tihs delay to constitute the proration of said wells for the period March 16 to March 31. The usual delays will not be allowed as shutdown time.

The overproduction made necessary in obtaining potential figures on March 16 will have to be prorated during the subsequent dates so that the total production by leases for the period March 16-31 shall equal the allowed amount for that period.

Late News from the Field

OKLAHOMA

Coming back after the regular Sunday shut-down, the Greater Seminole and St. Louis Pools produced 396,236 bbls. of crude. This is slightly more than normal, as the wells affected by the Sunday policy generally show a higher rate of production for Monday than they did for the preceding Saturday.

The entire output of the flush fields for three days, Sunday, March 17, when the wells were flowed wide open, and Monday, March 18, which was low on account of the Sunday shut-down, and Tuesday, March 19, follows:

Sunday morning	480,522
Monday morning	308,086
Tuesday morning	396,236

It is estimated that about 120,000 bbls. of crude production is now shut in by proration.

Northeast of Seminole City area, the Sinclair Oil & Gas Co.'s No. 1 Thompson, NE cor. SW Section 18-9-7, is making some oil from the Hunton lime as well as some production from the Wilcox sand. The well is bradenheaded, and the production for Tuesday morning was 700 bbls. on the swab from the Wilcox, and 90 bbls. flowed from the Hunton. The sand record for the Wilcox is unchanged remaining 4,250-60 feet.

An interesting well in the Maud area is the Gypsy Oil Co.'s No. 1 Johnson, NE cor. NW SW Section 15-8-5, which had the Hunton lime 3,996-4,010 feet, and is shut down at 4,030 feet in the Sylvan shale with a small showing of oil and gas.

The discovery well at Oklahoma City is increasing in oil production, but also increasing in the amount it is cutting.

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Work Resumed in Wichita Falls Area

Protracted Dry Spell Broken by Downpour and 100 Idle Rigs Start. Bulcher Pool Adds Another Good Well

By James H. Dameron
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Mar. 18.—Resumption of work on approximately 100 rigs in the Wichita Falls district idle for several weeks due to a protracted dry spell was the outstanding development in North Texas during the week. This number will be swelled by more than a score shortly by the starting of several wells that have been staked and awaiting a water supply before contractors moved in materials.

Almost four score wells in Wilbarger County which was the most severely hampered by the drought started up following a downpour in the Wichita Falls district that filled all the creeks and other water sources. Archer and Young Counties also were benefited and show an increase in field work.

The steady decline in production of the district since the first of the year was halted at least momentarily as a result of flush production in Cooke County and from pools in South Wichita County. Wilbarger County also showed an increase in production despite the enforced drilling restrictions on the area.

Good Well in Bulcher Pool

In the field there were few developments of interest and most of the completions were routine wells. The only exceptional well was Shell Petroleum Corp.'s well in the old Bulcher Pool in Cooke County which was a 771-bbl. well.

Wayne Hammon purchased the interests of M. M. Garrett in Archer, Wichita, Jack and Brown County, Texas, and some holdings in southern Kansas for a reported consideration of $200,000 cash. The deal was the largest of the group reported during the week.

Most of the interest in the Ranger district was centered around the Weaver area in Coleman County and the Matthews district in Shackelford County. The former pool suffered a reversal. Broderick & Calvert's No. 1 Weaver got only a show of oil at 1,847 feet and was abandoned at 1,861 feet. It is the second failure in the new pool that has only two producers. Shell Petroleum Corp.'s offset to a producing well missed the regular pay and drilled into an 8-bbl. showing in a lower zone. Completion of the well is being delayed by a fishing job which developed when 500 feet of casing was shot off in the hole.

In Shackelford County Engell Brothers' No. 3 Matthews, Section 32, E.T. R.R. Survey, was the most interesting well of the week. It is a twin to No. 1 which is producing from the upper sand at around 850 feet and made 400 bbls. on a swab test from the lower sand around 1,150 feet. On the pump the well made around 350 bbls. Several good wells have been completed in this area during recent weeks.

Panhandle Operations

Operators Oil Co.'s No. 3 Jackson, NW part of Section 88, Block B-2, H.&G.N. Survey, Gray County, was the outstanding well in the Panhandle when it started off flowing at the rate of 100 bbls. per hour from granite wash pay at 2,840-45 feet. The well is making 15,000,000 feet of gas along with the oil. It is in the Bowers Pool.

An unusually good completion for Hutchinson County at this stage of its productive life was Phillips Petroleum Co.'s No. 4 Johnson Brothers (Florence) which made 525 bbls. initially after a 100-quart shot at 2,854 to 2,914 feet.

The rig has been temporarily abandoned for the V. T. Bolin and associates' Cochran County test but the wildcat county retains a single drilling operation because of the Marland company's test in that county. The hole was lost on the first test and the derricks skidded north for No. 1 Slaughter, 330 feet east of the west line and 430 feet north of the south line, League 130. The well is drilling at 180 feet.

Panhandle production showed a small increase over the previous week when estimates showed a 55,950-bbls. daily average. Due to this increase and a larger one in the Wichita Falls district North Texas registered a 1,249-bbl. increase in daily average.

Estimated Daily Average Production
NORTH TEXAS
Week ending March 16

Panhandle district—	Bbls.
Carson County	6,175
Gray County	21,545
Hutchinson County	26,200
Moore County	1,355
Potter County	20
Wheeler County	655
Total this week	55,950
Total last week	55,640
Increase	310
Wichita Falls district—	
Archer County	16,881
Baylor County	80
Clay County	408
Cooke County	4,007
Jack County	1,553
Montague County	7,027
Throckmorton County	612
Wilbarger County	27,438
Young County	6,985
Wichita County	27,673
Total this week	92,664
Total last week	91,691
Increase	973
Ranger district—	
Brown County	8,774
Callahan County	3,673
Coleman County	3,673
Comanche County	1,111
Palo Pinto County	383
Ranger	5,704
Shackelford County	13,059
Stephens County	6,786
Total this week	43,163
Total last week	43,197
Decrease	34
Grand total this week	191,777
Grand total last week	190,528
Increase	1,249

WICHITA COMPLETIONS
Week ending March 16, 1929

Archer County

Barkley-Meadows and Riner & Bailey's No. 1 Wilson-C made 30 bbls. oil, 36 bbls. water at 1,365-70½ feet. L. T. Burn's No. 1 Turbeville-F was dry and abandoned at 1,600 feet. Magnolia Petroleum Co.'s No. 1 Wallace was dry and abandoned at 1,816 feet. Panhandle Refining Co.'s No. 1 Dowlen was dry and abandoned at 1,915 feet. Underwood Drilling Co. and others' No. 1 Perkins made 35 bbls. at 1,621½-23 feet. Consolidated Oil Co. of Texas' No. 1 Maxwell was dry and abandoned at 1,504 feet. Humble Oil & Refining Co. and others' No. 1 Logan-A made 21 bbls. at 1,121-37 feet. Lea & Daniels' No. 4 Williams made 18 bbls. at 572-79 feet. May-Camp Drilling Co.'s No. 3 Prideaux made 10 bbls. oil and 20 bbls. water at 552-76 feet. Petroleum Production Co.'s No. 1 Kunkel-A made 40 bbls. at 1,183-84½ feet.

Cooke County

Shell Petroleum Corp.'s No. 3 Dennis made 771 bbls. at 1,190-1,219 feet.

Clay County

Bain-Clark's No. 8 Landrum was dry and abandoned at 700 feet. Mid-Continent Oil Co.'s No. 3 Stines was dry and abandoned at 305 feet.

Jack County

General Oil Co.'s No. 1 Simpson was dry and abandoned at 2,207 feet.

Montague County

The Texas Company's No. 8 Gist-B made 31 bbls. at 836-52 feet. C. M. Beckner and others' No. 1 Phillips was dry and abandoned at 2,015 feet.

Wilbarger County

Fain McGaha Oil Corp.'s No. 7 Waggoner-L made 4 bbls. at 2,350-60 feet and was drilled to a total depth of 2,368 feet. Phillips Petroleum Corp.'s No. 2 Waggoner made 10 bbls. at 2,308-14 feet and was drilled to a total depth of 2,400 feet. The Texas Company's No. 1 Harris was dry and abandoned at 2,155 feet. Waggoner Refining Co.'s No. 1 Waggoner-L swabbed and flowed 560 bbls. at 2,394-2,410 feet.

Wichita County

John W. Caldwell's No. 11 Allen & Kemp made 44 bbls. at 1,635-50 feet. His No. 12 Allen & Kemp made 35 bbls. at 1,637-47 feet. C. A. Everts' No. 1 Mrs. Powell was dry and abandoned at 1,420 feet. J. A. Fisher's No. 1 Fisher made 8 bbls. at 306-10 feet. No. 2 Fisher made 3 bbls. at 307-12 feet. No. 3 Fisher made 5 bbls. at 305-11 feet. No. 4 Fisher made 5 bbls. at 306-13 feet. No. 5 Fisher made 3 bbls. at 307-12 feet. Hammon & Garrett's No. 1 McCarty-E made 25 bbls. at 1,346-71 feet. Magnolia Petroleum Co.'s No. 12 Donehoo made 6 bbls. at 1,290-95 feet. Red River Oil Co.'s No. 31 Bywater was temporarily abandoned at 2,150 feet. J. G. Rowe and others' No. 1 Waggoner Brothers made 17 bbls. at 1,293-1,300 feet. Ryan Petroleum Co.'s No. 1 Waggoner Brothers was dry and abandoned at 1,570 feet. Staley & Wynne's No. 7 Kemp & Kempner made 25 bbls. at 839-54 bbls.

Young County

Bratcher's No. 3 Edwards made 65 bbls. at 458-90 feet. Cunningham's No. 1 Edwards was dry and abandoned at 520 feet. Pannell and others' No. 2 Calvin made 50 bbls. at 559-71 feet. Richards and others' No. 3 Campbell-A was dry and abandoned at 920 feet. Roberts Oil Corp.'s No. 1 Garvey was dry and abandoned at 847 feet. The Texas Company's No. 1 Stewart-B made 30 bbls. at 737-42 feet. Williams' No. 3 Bagley was dry and abandoned at 651 feet. Wooten & Reed's No. 1 Vick was dry and abandoned at 605 feet.

RANGER COMPLETIONS
Week ending March 16, 1929

Brown County

Humble Oil & Refining Co.'s No. 20 Hodnett-A made 25 bbls. at 1,155-70 feet. The Texas Company's No. 5 Byler made 5 bbls. at 1,303-21 feet and was drilled to a total depth of 1,322 feet. A. D. Bruce's No. 5 Shields was dry and abandoned at 493 feet. E. T. Green and others' No. 3 Riordan was dry and abandoned at 1,192 feet. Humble Oil & Refining Co.'s No. 1 Tervooren made 2 bbls. at 991-94 feet. Harry McGee's No. 1 Daniels was dry and abandoned at 1,406 feet. Paramount Oil Royalties Co.'s No. 4 Mayes was dry and abandoned at 665 feet. Prairie Oil & Gas Co.'s No. 2 Hargrave made 5 bbls. at 1,285-89½ feet and was drilled to a total depth of 1,293 feet.

Callahan County

Delange & McKague's No. 1 Johnson was dry and abandoned at 1,620 feet. Moutray Oil Co.'s No. 1-B Hatchett was dry and abandoned at 855 feet. R. N. Webb's No. 1 Harris was dry and abandoned at 492 feet.

Coleman County

Broderick & Calvert's No. 1 Weaver had an oil show at 1,847 feet and was dry and abandoned at 1,861 feet. Schermerhorn Oil Co.'s No. 2 Eddington made 2,728,000 feet of gas at 1,108-12 feet. R. V. Whiteside's No. 1 McCreary was dry and abandoned at 640 feet.

Erath County

Hickory Oil & Gas Co.'s No. 1 Gordon was shot with 30 quarts at 3,210-80 feet and made 877,000 feet of gas, 1,200 rock pressure.

Eastland County

Gholson and others' No. 1 Fox was dry and abandoned at 1,140 feet. Swoveland and others' No. 1 Busbee was dry and abandoned at 1,530 feet.

Palo Pinto County

J. E. Merritt's No. 1 Hill was temporarily abandoned at 658 feet.

Shackelford County

Grisham-Hunter Corp.'s No. 1 Davis was shot with 5 quarts at 1,630-38 feet and made 16 bbls. Roeser & Pendleton, Inc.'s No. 37-A-61 Cook made 40 bbls. at 1,322-26 feet. No. 39-A-61 Cook made 40 bbls. at 1,198-1,228 feet. No. 10-A-83 Cook made 50 bbls. at 1,397-1,405 feet. Simms Petroleum Co.'s No. 7 Lones made 50 bbls. at 828-35 feet.

PANHANDLE COMPLETIONS
Week ending March 16, 1929

Carson County

Skelly Oil Co.'s No. 11 Schafer, 330 feet from south line and 990 feet from

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WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week ended March 16

Company, well, farm, name, section and block—	Remarks—
CARSON COUNTY	
Denson et als' No. 1 W. E. Cobb, 930 ft. from N line, 280 ft. from E line, W½ NW Sec. 184, Blk. 2, I.&G.N. Sur.	S.D. 2,200 ft.
Delmar Oil Co.'s No. 3 Noel, 330 ft. from E line and 990 ft. from N line W½ SE, Sec. 198, Blk. 3	Drlg. 3,090 ft.
Gulf Prod. Co.'s No. 1-E Cooper, 330 ft. S and W of NE cor. SW, Sec. 5, Blk. 9, I.&G.N. Sur.	Drlg. 1,925 ft.
Gulf Prod. Co.'s No. 6 Noel, 330 ft. S and 1,320 ft. E of NW cor. of SW Sec. 198, Blk. 3, I.&G.N.	Drlg. 1,215 ft.
Marland Prod. Co.'s No. 1 Burnett-L, 440 ft. S and 1,320 ft. NW of NE cor. Sec. 79, Blk. 4, I.&G.N. Sur.	Fish. 755 ft; to skid derrick.
McElroy Oil Co.'s No. 1 Lewis, 330 ft. S and E of NW cor. of SW of NE, Sec. 115, Blk. 4, I.&G.N.R.R. Sur.	Rig.
Morris et al's No. 1 Barnard, NW cor. SW SE, Sec. 44	S.D. 2,210 ft.
Reynolds et al's No. 1 E. Cooper, 330 ft. from S line and 330 ft. from E line NW, Sec. 5, Blk. 9, I.&G. N.R.R. Sur.	Pay 3,127-78 ft; swbd. 155 bbls.; to shoot.
Spartan Oil Co.'s No. 1 S. Bednorz, NW cor. E½ NW, Sec. 202, Blk. 3, I.&G.N. Sur.	Set 6-in. 2,658 ft. and fishing.
Skelly Oil Co.'s No. 1 Hedrick, 660 ft. from N line and 660 ft. from W. line Sec. 239, Blk. B-2, H.&G.N. R.R. Sur.	Drlg. 600 ft.
Skelly Oil Co.'s No. 12 Schaffer, 330 ft. from S line and 1,650 ft. from the W line of Sec. 88, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 3,140 ft.
Travis et al's No. 1 D. A. Harrell, C NE NE, Sec. 162, Blk. 7, I.&G.N. Sur.	S.D. 3,261 ft.
Ware et al's No. 1 Ware, 990 ft. S and 400 ft. E NW cor. Sec. 18, Blk. 3, A.B.&M. Sur.	Drlg. 4,275 ft.
CASTRO COUNTY	
Colorado O. & R. Co.'s No. 1 M. Slemmons, SW cor. Sec. 73, Blk. M-17, B.S.&F. Sur.	Rig blown down.

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Hendricks Three Quarters Through?

Some Believe Production May Be Down to 100,000 Bbls. Within Six Months. Increase in Howard County Potential

By James H. Dameron
Staff Correspondent, West Texas Fields

FORT WORTH, Tex., Mar. 18.—Without colorful developments in the field West Texas operators were interested mainly last week in conservation developments, progress of pipe line building and the various crude contracts made. Hendricks in Winkler County showed another drop in potential production while Yates remained virtually unchanged in that respect, but Howard County registered a substantial increase in potential. It appears that a Sunday shut-down movement may be tried for the first time in Texas in the southern Howard County pools.

A meeting of Howard County operators has been called by R. D. Parker of the Texas Railroad Commission and will be held in Dallas Tuesday night. Operators in the Roberts and Settles pools are seriously considering instituting the Sunday shut-down movement in the two pools and may reach an agreement at the Dallas meeting. It is planned to shut in all wells producing from the lime formation from 7 a. m. Sunday until 7 a. m. Monday. Drilling operations would be shut down at midnight Saturday until midnight Sunday night.

There are some rumors afloat the Railroad Commission is considering lifting proration in the fields. Several operators point out that proration thus far has helped the pools from the standpoint of water encroachment and that the restriction plan may not be lifted. The two pools under proration are producing close to 65 per cent of their potential capacity. The lime producers have an allowed production of 45,000 bbls. daily. Of this amount 35,000 bbls. is being produced from the Roberts Pool which is producing from the 2,500 and 3,000-foot lime pays. The remaining 10,000 bbls. is allotted to the Settles area which is producing from the 2,200-foot lime pay.

The monthly potential figures made for March 15 to April 15 rate the two pools with a potential production of 72,163 bbls. from 94 wells. This represents an increase of 12 wells and 6,717 bbls. in potential production. There are 62 producers in the 3,000-foot zone with a potential of 51,948 bbls., 16 wells in the 2,500-foot zone with a potential of 5,039 bbls. and the 2,200-foot zone with a potential of 15,176 bbls. On January 15 there were 61 wells with a potential production of 46,231 bbls.

ESTIMATED DAILY AVERAGE PRODUCTION, WEST TEXAS

Week ending March 16, 1929

County—	Wells	Prod.
Crane County	278	37,038
Crockett County	45	2,306
Ector County	2	7
Fisher County	7	965
Glasscock County	17	908
Howard County	285	49,505
Jones County	75	6,195
Loving County	10	668
Mitchell County	142	2,549
Pecos County	287	86,892
Reagan County	240	18,585
Runnels County	3	136
Scurry County	5	31
Upton County	265	13,137
Ward County	2	126
Winkler County	565	166,592
Total this week	2,228	385,640
Total last week	2,215	386,878
Difference	13	1,238

Disappointing at 3,000 Feet

American Maracaibo Oil Co.'s No. 2 Settles-C, Section 6, Block 32, T-2-S, in the Settles Pool, is proving disappointing. The well is drilling below 3,929 feet without any increase in oil shows and has clouded the hopes for 3,000-foot production in the Settles Pool.

The best well of the week was Mid-Kansas Oil & Gas Co. and Transcontinental Oil Co.'s No. 8 Yates-H, Section 32, Block 194, on the south side of the Yates Pool in Pecos County. From pay at 1,395-1,575 feet the well made 1,643 bbls. in one hour on a proration test. It was flowed through three 4-inch lines against 100 pounds back pressure.

Winkler County's potential production dropped 34,428 bbls. to 2,378,019 bbls. bringing the potential down more than 400,000 bbls. from the peak reached last October. Thirty wells were gauged during this period and the county had 555 wells at this time on 250 forty-acre units. Most of the drop was recorded in the Hendricks Pool.

Engineers who have been in the field since its early development estimate that Hendricks is three-quarters through with its flush period and in less than six months the production will be down below 100,000 bbls. daily. Those same engineers point out that the potential of Hendricks is artificial and that some of the wells with big potential ratings and now making pipe line oil, would go to water over night if they were opened.

The advisory committee of the Winkler County proration plan may iron out some of the difficulties that have been brought about by the injunctions obtained in a few instances restraining the Railroad Commission from enforcing proration in the pool. However, this problem is not considered serious at this time. Those wells that have been opened have started making water and not many operators are desirous of opening their wells any wider. The handling of the water produced along with the oil is getting to be a serious problem in itself on several leases. It is estimated that 4 bbls. of water is produced with every barrel of oil.

Since its discovery and up to March 1 Winkler County has produced 71,600,000 bbls. of oil. This compares with 58,016,000 produced in the Church and Fields Pool in Crane and Upton Counties. West Texas up to the same period boasts of an accumulated production of 213,832,000 bbls. from 2,108 wells.

Crude Contracts

Several crude contracts were made involving West Texas crude and indicate a firm market for the Permian Basin production. The largest deal was by The Texas Company when it purchased 2,407,731 bbls. of crude from the Southern Crude Oil Purchasing Co. The oil is Hendricks Pool crude now in storage in the Southern company's tanks at Wickett in Ward County. The reported price is 72½ cents per barrel. The 7½ cents above the posted price represents a gathering charge.

Southern company has thirty-one 80,000-bbl. tanks, three 55,000-bbl. tanks and 45,000 bbls. in small storage on the farm in Section 20, Block F, Ward County. Until The Texas Company is ready to handle the oil it will remain in the Southern company's tanks which have been leased for 3 cents per barrel per month. Southern company will continue to store on the tank farm.

Pipe Line Progress

The Texas Pipe Line Co. is building a 12-inch line out of West Texas to Houston. This line was scheduled for completion about the middle of April but completion will be several weeks later. The transporting company is building storage in New Mexico and has extended its communication system to a point near Jal.

Shell Pipe Line Co. is the other company building a main artery out of West Texas at this time. That line will be a 10-inch carrier running from McCamey to Houston and is scheduled for completion about the middle of April. Gulf Pipe Line Co. and Magnolia Pipe Line Co. are about half through with their two extension lines running from Midland storage farms to the Hendricks Pool.

Humble Pipe Line Co. is increasing its line capacity on its east line out of West Texas and has closed a contract with the Mid-Kansas Oil & Gas Co. whereby the latter will deliver 40,000 bbls. daily to the Humble company at Lytle station. The station is on the Humble's line running south to Ingleside Harbor and the Illinois Pipe Line Co. (subsidiary of the Mid-Kansas) built a line some time ago to Lytle station. According to field reports the life of the contract is five years and the Humble can purchase as much as 50,000 bbls. daily if it desires.

The Mid-Kansas company has a 5,000-bbl. daily contract with the Louisiana Oil & Refining Corp., Shreveport, and is loading the oil at its racks at Del Rio. The same producer has contracted to deliver 2,500 bbls. daily beginning April 1 to the Del Rio Refining Co. The refining company has a fuel contract with the Southern Pacific Railroad.

Amerada Petroleum Corp. made a contract with Louisiana Oil & Refining Corp. to deliver the latter concern 5,000 bbls. of Hendricks crude daily. The oil will be loaded in tank cars at Pecos City. Atlantic Pipe Line Co. has started delivery on 7,500 bbls. daily to the Humble company on the Gulf Coast and started a few days ago taking 5,000 bbls. daily from the Gulf Production Co. for a period of 12 months.

Pipe Line Runs

As a result of an increase in production crude runs to storage in West Texas for the week ending March 7 increased 10,000 bbls. over the previous week to 37,352 bbls. daily. The following detailed report shows a comparative report on crude movements in West Texas for the two periods.

PIPE LINE RUNS
February 28 to March 7, 1929 (Inclusive)

Runs Through Trunk Line	Last period
Atlantic P. L. Co., to Port Arthur, Tex.	36,122
Gulf P. L. Co., to coast via Ranger Tex.	24,236
Humble P. L. Co., via Comyn, Tex.	40,433
Humble P. L. Co., via Ingleside, Tex.	50,126
Illinois P. L. Co., via Del Rio, Tex.	44,000
Magnolia P. L. Co., to coast via De-Leon, Tex.	29,282
Pasotex P. L. Co., to El Paso, Tex.	10,487
Shell P. L. Co., to Healdton, Okla.	37,472
Total	272,148
Tank Car Shipments	
Thomas & Brown, Grant City	522
Orient, McCamey, Tex.	150
The Texas Company, Crossett, Tex.	1,053
American Pet. Co., Pyote, Tex.	6,588
Cosden & Co., Big Spring	6,322
Shell Pet. Co., Monahans, Tex.	2,037
Skelly Oil Co., Pecos, Tex.	2,737
Southern Crude, Wickett, Tex.	15,312
The Texas Company, Monahans, Tex.	454
Total	35,760
Runs to West Texas Refineries	
Amarillo Prod. Co., Pyote, Tex.	2,445
Blue Bonnett Ref. Co., Wickett, Tex.	7,780
Burford Ref. Co., Pecos, Tex.	5,000
Col-Tex Ref. Co., Colorado, Tex.	6,500
Great-Western Ref. Co., Big Spring, Tex.	4,117
Humble O. & R. Co., McCamey, Tex.	6,197
Midland Ref. Co., Midland, Tex.	2,199
Tonkawa Ref. Co., Pyote, Tex.	2,387
Valley Ref. Co., Pyote, Tex.	5,173
Big Spring Ref. Co., Big Spring, Tex.	2,625
Total	44,424

Summary

	Previous week	Last period
Pipe line runs	265,259	272,148
Tank car shipments	39,200	35,760
Runs to West Texas refin.	44,346	44,424
Total daily disposition	348,805	352,332
Daily average production	376,600	389,684
Daily average to storage	27,795	37,352

Better Outlook in Ward

The most interesting development in the field was in Ward County and in the H. Shipley area. J. H. L. Oil Co.'s No. 1 Hayzlett, Section 17, Block 5, which extended the area, gives the Ward area a better outlook. It had pay at 2,455-69 feet and on a one-hour swab test it made 78 bbls. After the last trip of the swab 1,600 feet of oil rose in the hole in two and a half hours. The well is estimated good for 150 bbls. daily.

Texon Oil & Land Co.'s 8,500-foot well in the Big Lake Pool in Reagan County

(Continued on Page 151)

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended March 9

ANDREWS COUNTY

Company, farm and location—	Remarks—
Deep Rock Oil Co.'s No. 1 Hostetler, 2,310 ft. N and W of SE cor. Sec. 20, Blk. A-46	Hole full water 1,390 ft.; underreaming 10-in. casing; top salt 1,890 ft.; drlg. 2,835 ft., salt and anhydrite; total depth 3,250 ft.; set 8¼-in. casing 2,790 ft.; no gas.
Mid-Continent Oil & Gas Co.'s No. 1 Fisher, 1,320 ft. N and 200 ft. E of SW cor. Sec. 5, Blk. A-36	Building rig.

BORDEN COUNTY

Gibson & Johnson's No. 1 Higginbotham, middle of S line of Sec. 8, Blk. 31, Twp. 3n, T.&P.R.R. Sur.	Rigging up.
C. E. Hyde et al's No. 1 D. H. Beal, C NE Sec. 14, Blk. 31, Twp. 3n, T.&P.R.R. Sur.	Shut down 405 ft.
Teas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur.	Location.

BREWSTER COUNTY

E. W. Bateman et al's No. 1 Nevill, 2,000 ft. from S line and 1,000 ft. from W line of Sec. 64, Blk. 13, G.H.& S.A.R.R. Sur.	Show oil and gas; hole full of water; underreaming 1,926 ft.
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 4, Blk. G-15, G.C.&S.F.	Drlg. 850 ft.
Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur.	Set 8-in. 1,530 ft.; shut down 2,000 ft.
Forrest Oil Co.'s No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,310 ft.; show oil 1,300 ft.
J. M. Hickey's No. 1 Jackson & Harmon, NE cor. Sec. 182, Blk. 9, G.H.&S.A. Sur.	Shut down 1,150 ft.
Johnson & Weekly's No. 1 Jackson & Harmon, C Sec. 104, Blk. 10, G.H.&S.A. Sur.	Drlg. 65 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,740 ft.
Williams and others' No. 1 Poncey, 459 ft. S and 1,962 ft. E Sec. 26, Blk. 214, T.&St.L.R.R. Co.	Shut down 515 ft.

(Continued on Page 107)

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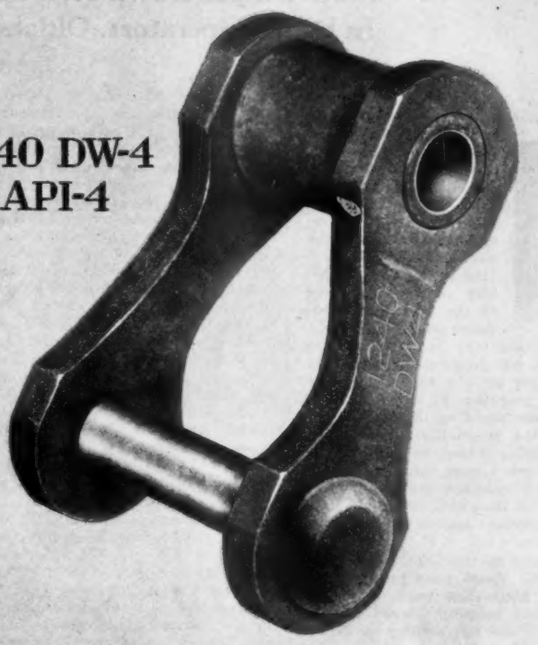

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STOCKS IN ALL ACTIVE OIL FIELDS

Oklahoma Has Big Drop By Proration

State Output Down 30,000 Bbls. Daily, With 105,000 Bbls. Shut In by the Operators. Oklahoma City Well Improving in Output

By J. L. Dwyer

Proration of production in the flush fields of Oklahoma again showed results last week when the daily average production of the State was reduced by about 30,000 bbls. The current figures show approximately 649,000 bbls. for the week ending Saturday, March 16, or 30,000 bbls. below the average of the preceding week, which was 679,325 bbls.

This reduction may be attributed to proration of oil production exclusively except that the drilling wells which are taking their proration by shutting down for 80 days are assisting the decrease by eliminating the possibility of any new production being added to the figures. There have been a good many wells shut down for the required period of eight days on top of the sand, and these have played an important part in holding down the production.

All the wells of the Greater Seminole and St. Louis Pools were thrown wide open for 24 hours last week starting 7 a. m. Saturday morning, March 16, and flowing to 7 a. m. Sunday morning, March 17. That there is considerable production held in check may be noted from the total production of these regions which on Sunday morning was 480,000 bbls. On Monday morning the same pools showed only 308,000 bbls., but this figure is slightly below normal as the Sunday shutdown policy adopted by eight companies resulted in a material decrease. It is now estimated that in their present status, the Greater Seminole and St. Louis Pools have about 105,000 bbls. daily oil production eliminated through proration, and should this continue and the already evident signs of early spring continue with a resultant gasoline demand, the crude situation in the Mid-Continent will be appreciably strengthened.

Oklahoma was rather quiet in the matter of outstanding well completions last week. By way of general interest in the State there is some attention being given to the oil possibilities of the southeastern portion, and it is reported that some magnetometer work is being done around Durant in Bryan County. There have been various exploration parties in this part of the State at intervals during the past few years, but the present activity is the first which has been reported in over one year.

Maud and Mission

In the matter of productive territory, the Misener sand pool of the Maud area and the Mission Pool are the most interesting. The former offers some new wells of good yield, while the latter is becoming more and more disappointing each day. The output of Mission is slipping rapidly, and shows very little which would justify the heavy drilling campaign which seemed likely three weeks ago.

The Misener sand pool of Maud was brought into notice once more by the completion of another big well. It was Amerada Petroleum Corp.'s No. 4 Hallum, SE cor. NE SE, Section 1-8-4. This well had the Misener sand 4,003-34 feet, and started flowing 4,750 bbls. per day naturally. This big yield, while of interest, is not regarded as especially significant mainly on account of the sand from which the production is coming. There have been other large wells completed to the Misener in this region, and their decline has been exceptionally rapid. The Amerada well is situated on the extreme northwest edge of the field.

On the west side of the Misener sand pool, the Shell Petroleum Corp., and the Marland Production Co.'s No. 1 Everett, NE cor. NW SW, Section 18-8-5, made 1,400 bbls. daily from the Misener found 4,154-90 feet. This rate of production is more typical of the wells which have been drilled in this vicinity.

In the Wilcox sand region of Maud there were a few wells drilled to that formation with more or less good results. The Empire Oil & Refining Co.'s No. 3 Cluck, SW cor. NW SE, Section 11-8-5, had the Wilcox sand 4,247-60 feet and made 2,030 bbls. in 24 hours after it was placed on air. The Barnsdall Oil Co.'s No. 3 Coker, SE cor. NE SW, Section 11-8-5, flowed 900 bbls. naturally from the Wilcox sand 4,160-72 feet. The same company's No. 7 Coker, NW cor. SE SW, Section 11-8-5, is good for 600 bbls. in the same sand found 4,215-27 feet. The Prairie Oil & Gas Co.'s No. 4 Billington, SE cor. NW SW, Section 11-8-5, made 1,350 bbls. on air from sand 4,145-50 feet.

Searight Extension

An important extension to the Searight Pool is the Prairie Oil & Gas Co.'s No. 2 Hurford, SW cor. NE SE, Section 32-10-6. This well is good for 1,539 bbls. on air from the Wilcox sand 4,417-28 feet. It gives the pool a slight extension to the northeast, and it appears that there will be some good results expected to the northwest of this well.

A complete surprise came from the territory northeast of the old Seminole City Pool. It was occasioned by the Sinclair Oil & Gas Co.'s No. 1 Thompson, NE cor. SW, Section 18-9-7. This well found the Wilcox sand 4,250-60 feet, and started swabbing 710 bbls. daily. It can hardly be classed as an extension, but probably will result in the spread of a small finger of production from the Seminole City Pool. It is more likely that it will be a small pool by itself rather than connect definitely with the Seminole City area.

Pipe Line Runs

In the matter of marketing, it is interesting to note that this daily average pipe line runs out of the Seminole region last week exceeded the daily production. The daily average pipe line runs for the week ending Saturday, March 16, follows:

	Bbls.
Barnsdall	7,259
Champlin	7,495
Continental	621
Consolidated	267
Mid-Continent Pet. Corp.	7,735
Empire	8,871
Gulf	28,612
Independent	2,852
Magnolia	18,215
Oklahoma	46,472
Prairie Pipe	58,358
Producers & Refiners	37
Pure	6,235
Shaffer	5,182
Shell	13,881
Sinclair	23,243
Texas	14,765
Tidal	17,600
White Oak	2,630
Total	270,330

The daily average tank car shipments out of the field for the same period were:

	Bbls.
Amerada	2,222
Carter	6,536
Total	8,758

The St. Louis Pool was very quiet during the week, and the daily average pipe line runs for that pool for the week ending Saturday, March 16, follow:

	Bbls.
Consolidated	2,438
Gulf	8,409
Independent	5,402
Magnolia	26,253
Oklahoma	6,950
Prairie	17,776
Shell	3,300
Sinclair	18,457
Texas	3,789
Tidal	2,100
Total	94,874

Oklahoma City Well

The Oklahoma City discovery well which was slipping somewhat in output and caused some apprehension seems to have come back in good manner. The well showed a sudden decrease which was sustained for over two weeks, but now the well is steadily increasing. The current output is 2,592 bbls. of oil daily which is cutting slightly less than 1 per cent after being treated. This comeback has revived the interest in this territory, and has to a large extent caused a disappearance of the feeling that the well was going dead, and that the future of the area was therefore limited.

Alfalfa County

Smith Brothers' No. 1 Forbes, NE cor. SE NW NW, Section 12-27-11w, is a rig under construction for a deep test.

Hughes County

Harris & Hays Oil Co. is building the rig for No. 2 Manley, CSL SE SE, Section 13-9-9. The Prairie Oil & Gas Co. has the rig on the ground for No. 1 Roberts, C NE NW, Section 34-9-10. Independent Oil & Gas Co.'s No. 1 Jackson, C NW SE, Section 11-7-8, has been completed for 38,000,000 feet of gas in sand at 3,027-33 feet. Shaffer Oil & Refining Co. and Winona Oil Co.'s No. 1 Harner, SW cor. NE, Section 20-7-8, is dry and abandoned at 4,382 feet in Wilcox sand.

Kay County

Marland Production Co. is building the rig for No. 4 White, NE cor. NW, Section 17-29-1. No. 2-A North, Lease No. 1, NW cor. NE, Section 12-26-2w, Hubbard Pool, is rigging up to plug back from the old depth of 3,755 feet to the Layton sand and shoot. No. 2 Whipple, SW cor. SE SW, Section 19-23-3w, is a rig under construction.

Industrial Oil & Gas Co.'s No. 4 School Land, NE cor. SW SW SW, Section 36-28-1w, has been completed for 591,000 feet of gas in sandy lime at 754-63 feet. D. J. Wilson's No. 1 Sheer, NE cor. SW SW NE, Section 24-27-1, has been abandoned at 805 feet. H. A. G. Oil Co.'s No. 4 Buessing, SE cor. NE NW, Section 28-27-1, was completed for 500,000 feet of gas in lime at 860-1,010 feet.

Oklahoma County

McElroy & Wall's No. 1 Hartzell, NW cor. SW, Section 6-11-2w, is a rig going up.

Osage County

Oliphant and others' No. 1, SW cor. NE NW, Section 31-27-8, is a machine moving in. Galt Brown Oil Co. made location for No. 5, NW cor. SE NW, Section 7-24-8. Continental Oil Co. has the rig up for No. 2, SW cor. SE, Section 31-24-9. Ray Branstetter and others made location for No. 1-A, SW cor. Section 12-22-11. Tidal Oil Co. has a machine on the location for No. 1, SW cor. NE, Section 29-21-11.

Phillips Petroleum Co.'s No. 3, NW cor. SE SE SW, Section 21-25-12, drilled to 1,714 feet and plugged back to 1,678 feet where it made a 5-bbl. well. McCune and others' No. 1, NW cor. SW NE, Section 15-24-8, is dry and abandoned at 565 feet. Mid-Kansas Oil Co.'s No. 5, NE cor. SE SW, Section 36-22-8, was completed for 200 bbls. in sand at 346-68 feet. Indian Territory Illuminating Oil Co.'s No. 26, CWL NE, Section 26-22-10, is dry and abandoned at 2,425 feet. Ray Branstetter's No. 2, CWL E half SE, Section 22-22-11, made 15 bbls. from Bartlesville sand at 1,662-1,704 feet.

Pawnee County

Peter Adamson is rigging up machine for No. 4 Thomas, NE cor. SE NW, Section 25-21-8. Moore and others' No. 1 Purcell, CNL NW SE, Section 28-21-8, is rigging up. Edwards and others moved a machine to the location for No. 1, SW cor. NW SW, Section 30-21-9.

Ora Stein has the rig up for No. 2 Clark, NE cor. SW, Section 9-20-7. Flanagan & Johnson's No. 1 Keystone Townsite, Lot 67, Block 73, CNL NW SE, Section 25-20-9, is an old well drilling deeper at 2,186 feet.

Henrico Oil Co.'s No. 4 Cotton, SW cor. NW NE, Section 6-20-8, had Bartlesville sand at 2,507-2,600 feet, plugged back to 2,598 feet and made 20 bbls. Operators Oil Co.'s No. 1 Powell, SE cor. NE NW, Section 15-20-9, is dry and abandoned at 2,512 feet.

Pontotoc County

Superior Oil Co. is building the rig for No. 4 Maulden, NW cor. SW NW, Section 32-5-5. W. R. Ramsey's No. 7 Millner, NE cor. SE SE, Section 18-5-8, Allen Pool, is a rig being built. Westheimer & Daube's No. 11 Wade, SW cor. SE SW, Section 19-5-8, is a rig building.

Pottawatomie County

Phillips Petroleum Co. made location for No. 1 Reade, NE cor. NW NW, Section 8-9-5, west of Earlsboro Pool. Magnolia Petroleum Co. made location for No. 1 Singletary, SE cor. SW, Section 15-7-4, St. Louis area. Darby Petroleum Co. is erecting the rig for No. 2 Youngblood, SW cor. SE NW, Section 16-7-4. Skelly Oil Co. is building the rig for No. 1 Decker, NE cor. NW SW, Section 16-7-4. Magnolia Petroleum Co.'s No. 1 I. Rowe, NE cor. NW SW, Section 18-7-5, is a rig under construction. The Prai-

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

LATTIMER COUNTY

Company, farm and location—	Remarks:
Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18	1,000,000 ft. gas 2,518-20 ft.; drlg. 2,828 ft.

GRANT COUNTY

Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w	Shut down 5,640 ft.
Lario-Lathrop's No. 1 Cornell, NW cor. NW Sec. 24-28-3w	Casing 3,880 ft.

HARPER COUNTY

Hoffer Oil Co.'s No. 1 Cooper, NW cor. SE SE Sec. 12-25-22w	Shut down 4,130 ft.

KAY COUNTY

Wentz Oil Corp.'s No. 1-A Ward, C NW SE SW Sec. 32-27-1e	Drlg. 2,720 ft.

WOODWARD COUNTY

Sharon Oil Co.'s No. 1 Elmore, SW cor. SW Sec. 25-21-21w	Rig blown down 3,025 ft.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w	Shut down 2,342 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w	Shut down 1,910 ft.
Wilson et al's No. 1 Unknown, NE cor. SW Sec. 4-23-16w	Spudded.

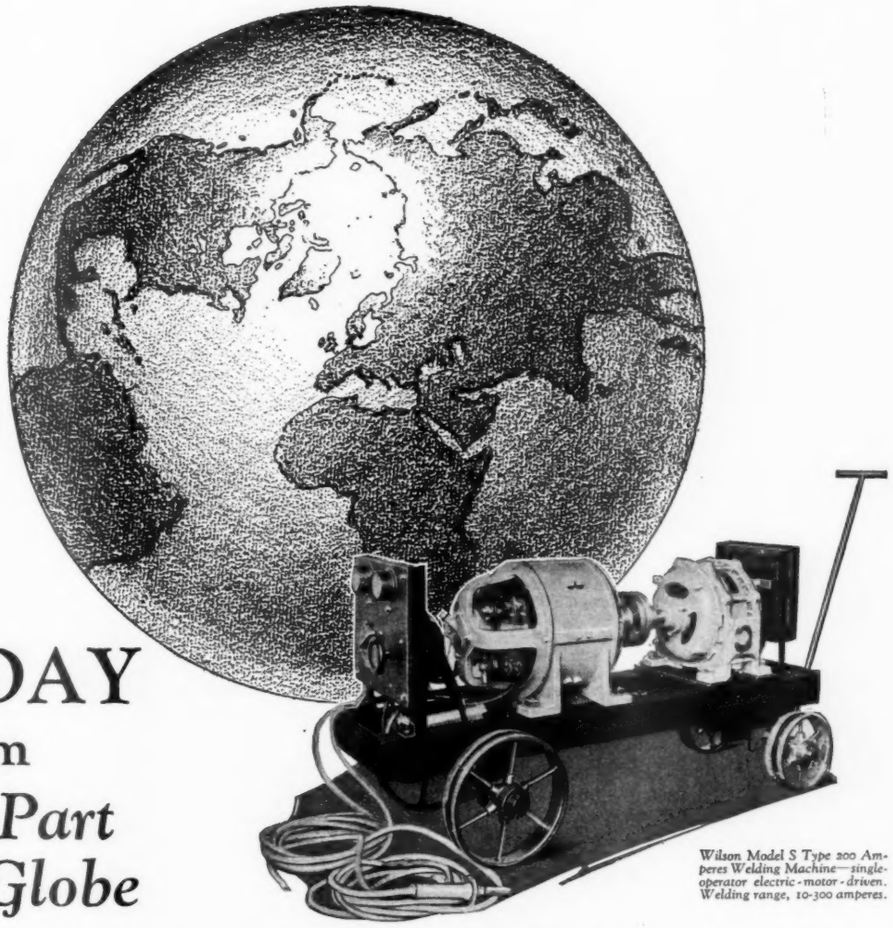
GARFIELD COUNTY

E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 4,755 ft.

GARVIN COUNTY

Mid-Continent Petroleum Corp.'s No. 1 James, SE cor. SE Sec. 22-5-3	Drlg. 1,250 ft.

(Continued on Page 119)



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WELDING MACHINES AND WELDING WIRE

rie Oil & Gas Co. made location for No. 1 Rice, NE cor. SE NE, Section 17-7-14.

Atlantic Oil Producing Co. and Gypsy Oil Co.'s No. 1 Delaware, SE cor. NE NE, Section 13-9-4, made 26 bbls. at 4,233 feet after plugging back from 4,467 feet in Wilcox sand. The Texas Company's No. 5 Calvin, SW cor. SW, Section 7-8-5, Maud Pool, was completed for 710 bbls. in Misner sand at 4,210-36 feet. Tidal Oil Co.'s No. 1 Smith, NW cor. SW SE, Section 8-8-5, made 415 bbls. from sand at 4,109 feet. Pure Oil Co.'s No. 6 Lindley, NW cor. SW SE, Section 18-8-5, produced 440 bbls. from Hunton lime at 4,088-4,116 feet.

Sinclair Oil & Gas Co.'s No. 8 Bellars, SW cor. NE NE, Section 19-8-5, was completed for 580 bbls. in Hunton lime at 4,168-95 feet. Home Gas Co.'s No. 1 Townsite, SW cor. Section 14-7-4, made 470 bbls. from Simpson sand at 4,241-73 feet. Darby Petroleum Co.'s No. 1 Youngblood, SE cor. NW, Section 16-7-4, flowed 750 bbls. from Hunton lime at 3,630-3,865 feet. Gypsy Oil Co.'s No. 3 Le Clair, SE cor. SW SE, Section 23-7-4, made 285 bbls. from Wilcox sand at 4,290-4,311 feet after being deepened from Simpson sand. Sinclair Oil & Gas Co.'s No. 1 Bruno, CNL NE, Section 26-7-4, was deepened from 4,275 feet in Simpson sand to Wilcox sand at 4,413-22 feet and flowed 450 bbls.

Seminole County

Superior Oil Corp. is building the rig for No. 3 Ingram, NE cor. NW NW, Section 1-9-5, Earlsboro Pool. Carter Oil Co. moved the rig out for No. 1 C. Skiff, SE cor. NE, Section 10-9-6. Shaffer Oil & Refining Co. is erecting the rig for No. 1 Grisso, NW cor. SE, Section 7-9-7. Pure Oil Co. has the rig on the ground for No. 1 Louisiana, NE cor. SW, Section 15-9-7. Sinclair Oil & Gas Co. has the cellar dug for No. 3 L. Harjo, NE cor. SW SE, Section 11-8-5, Mission Pool.

The Prairie Oil & Gas Co. is building the rig for No. 8 Billington, SW cor. SE NW, Section 11-8-5. No. 9 Billington, NE cor. NW SW, Section 11-8-5, is also a rig under construction. T. B. Slick's No. 1 Ripley, NE cor. SW SE, Section 12-8-5, is a rig under construction. Tidal Oil Co.'s No. 5 Nellie, NW cor. SE SE, Section 12-8-5, is a cellar. T. B. Slick is moving in tools for No. 2 Fulton, NE cor. SE, Section 13-8-5. Gypsy Oil Co. made location for No. 11 N. Barkus CLN SW Section 6-8-6.

Location was also made for No. 8 Mission, SW cor. SE SE, Section 6-8-6. The Prairie Oil & Gas Co. is building the rig for No. 4 Melton, SE cor. SW NW, Section 6-8-6. Location has been made for No. 5 Melton, SW cor. SE NW, Section 6-8-6. No. 2 Townsend, CNL NE SW, Section 6-8-6, is a rig going up. Gypsy Oil Co. made location for No. 5 Doser, NW cor. NE NE, Section 7-8-6. No. 8 Cotcha, SW cor. Section 23-7-6, Little River Pool, is a cellar. Barnsdall Oil Co. has the cellar dug for No. 2 Barkus, NW cor. SW NE, Section 26-7-6. T. B. Slick is moving in tools at No. 1 Harris, NW cor. Section 26-7-6.

Carter Oil Co. made location for No. 1 B. Larney, SE cor. SW NW, Section 26-7-6. Empire Oil & Refining Co. made location for No. 1 Cotcha, NE cor. SE NE, Section 27-7-6. T. B. Slick made location for No. 1 Ragland, NW cor. NE SW, Section 36-7-6. The Texas Company made location for No. 9 Lucy, NE cor. NW NE, Section 19-5-8, Allen Pool.

Shaffer Oil & Refining Co.'s No. 2 McKoy, NW cor. SW SW, Section 36-10-5, is dry and abandoned at 4,470 feet in Wilcox sand. Mid-Continent Petroleum Corp.'s No. 3 Nevins, NW cor. SE SE, Section 32-10-6, Searight Pool, was completed for 430 bbls. in Wilcox sand at 4,385-94 feet. Skelly Oil Co.'s No. 4 Mayes, NW cor. SE NE, Section 1-9-5, Earlsboro Pool, made 220 bbls. from Wilcox sand at 4,432-42 feet.

Gypsy Oil Co.'s No. 16 Sango, NE cor. SW NE, Section 1-9-5, is dry and abandoned at 4,360 feet. Shaffer Oil & Refining Co.'s No. 1 James, SE cor. NW, Section 15-9-7, was completed for 30,000,000 feet of gas in sand at 3,507-59 feet. Gypsy Oil Co.'s No. 2 Mosar, NE cor. SE NE, Section 1-8-5, Mission Pool, was completed for 385 bbls. in Wilcox sand at 4,351-56 feet. Twin State Oil Co.'s No. 1 Ripley, SE cor. NE, Section 12-8-5, made 770 bbls. in Wilcox sand at 4,454-62 feet.

Shaffer Oil & Refining Co.'s No. 1 Weaver, NE cor. Section 12-8-5, was completed for 1,250 bbls. in Wilcox sand at 4,296-4,302 feet. Gypsy Oil Co.'s No. 2 Mission, SE cor. SW, Section 5-8-6, made 85 bbls. from Wilcox sand at 4,439 feet. No. 6 Mission, NW cor. SE SE, Section 6-8-6, produced 800 bbls. from Wilcox sand at 4,724-31 feet. No. 7 Mission, SW cor. NE SE, Section 6-8-6, flowed 1,710 bbls. from Wilcox sand at 4,712-17 feet.

No. 5 N. Barkus, NW cor. SW, Section 6-8-6, was completed for 2,110 bbls. in Wilcox sand at 4,639-46 feet. Shell Petroleum Corp. and Papoose Oil Co.'s No. 4 Maines, NW cor. SW SW, Section 7-8-6, made 463 bbls. from Wilcox sand at 4,155-67 feet. Gypsy Oil Co.'s No. 1 Hardy, NE cor. SW NE, Section 7-8-6, pumped 210 bbls. from Wilcox sand at 4,653-57 feet. No. 2 S. Barkus, SW cor. NW, Section 7-8-6, made 172 bbls. from Wilcox sand at 4,480-85 feet. Carter Oil Co.'s No. 2 Micco, NE cor. NW NW, Section 8-8-6, was completed for 680 bbls. in Wilcox sand at 4,631-33 feet.

W. B. Pine's No. 1 S. Micco, NW cor. NE NW, Section 8-8-6, is dry and abandoned at 4,442 feet. T. B. Slick's No. 1 Wyetha, NW cor. SW SW, Section 24-5-7, swabbed 85 bbls. from 4,490 feet in Simpson sand after plugging back from 4,557 feet in Wilcox sand. Sunray Oil Co.'s No. 8 Culley, SE cor. NE SE NE, Section 18-5-8, Allen Pool, made 250 bbls. from Cromwell sand at 2,530-88 feet. Louisiana Oil Refining Co.'s No. 5 Reed, SE cor. NE NE, Section 18-5-8, swabbed 240 bbls. from Cromwell sand at 2,550-2,625 feet.

The Texas Company's No. 7 Lucy, NE cor. NW NE, Section 19-5-8, made 500 bbls. from Cromwell sand at 2,515-35 feet. The Prairie Oil & Gas Co.'s No. 2 Billington, NW cor. SW, Section 11-8-5, Mission Pool, made 750 bbls. from Wilcox sand at 4,232-35 feet. No. 4 Billington, SE cor. NW SW, Section 11-8-5, came in for 1,400 bbls. in Wilcox sand at 4,144-50 feet.

Beckham County

Magnolia Petroleum Co.'s No. 2 Gray, C SE SW, Section 14-9-23w, has been completed for 12,000,000 feet of gas in sandy lime at 2,796 feet.

Carter County

Magnolia Petroleum Co. is building the rig for No. 3 E. Gill, NW cor. SE SE, Section 23-1s-3w. Gilmer Oil Co. made location for No. 1 Hernstadt, NW cor. NE NE, Section 26-1s-3w. Wirt Franklin Petroleum Corp.'s No. 4 Carpenter-Morris, NE cor. NW SW, Section 11-2s-3w, made 67 bbls. from sands at 2,001-3,711 feet.

Cotton County

W. H. Herbow's No. 1 Brown, NE cor. SW, Section 33-3s-12w, rigged up and shut down. Heydrick and others made location for No. 1 White, NW cor. NE SE, Section 18-3s-11w. Derden & Priott made location for No. 1 Ednar, NE cor. SW, Section 21-2s-11w. Silurian Oil Co. made location for No. 4 Chambers, NE cor. SE SW NW, Section 2-2s-10w.

Creek County

J. H. Markham and Tidal Oil Co.'s No. 7 Johnson, CSL NE NW, Section 2-19-7, is repairing rig to deepen. W. S. O'Hara and others made location for No. 1 Ralston, SE cor. Section 32-18-10. Magnolia Petroleum Co.'s No. 10 B. Lewis, CWL SW SW, Section 27-17-7, Drumright Pool, is preparing to deepen from 1,515 feet. Central Commercial Oil Co. made location for No. 2 Hay, NW cor. SW, Section 10-17-10.

H. U. Bartlett and others' No. 2-B Sewell, SW cor. NW NE, Section 18-19-9, was completed for 3,250,000 feet of gas in sands at 2,184-2,206 feet and 2,397-2,450 feet. Houston Oil Co.'s No. 3 Bullett, SW cor. NE NE, Section 20-17-7, Drumright Pool, made 25 bbls. from sand at 2,369-2,408 feet after it was plugged back from 2,886 feet. Turman Oil Co.'s No. 5 Pemberton, CEL NE

(Continued on Page 72)

COMPLETIONS IN SEDGWICK COUNTY OFFER IDEA OF POSSIBILITIES

By J. L. Dwyer

There were some interesting well completions in the Sedgwick County territory last week, and one exceptionally interesting event was that the first well of the group around the discovery well was placed on the pump after it had stopped flowing naturally.

The significance of the one well around the Wright Pool being placed on the pump is rather important as it is believed to offer a definite idea of the possibilities of this particular spot.

The first well in this region was drilled by the Gypsy Oil Co., the Marland Production Co. and the Bu-Vi-Bar Petroleum Co. It was No. 1 Wright, an odd location in Section 12-26-1w. The wells around this have had good natural flowing life, and the past week the same owners' No. 1 Lantz, a direct south offset of the discovery well, went dead, and is now being placed on the pump. It was considered probable that good production would be found to the south of the discovery well, but the slipping of the No. 1 Lantz has a tendency to discourage this thought.

The remaining wells around the discovery have held their output well with no indication they will follow the performance of the No. 1 Lantz.

The completion of the other wells in the Sedgwick area do not lend much help to the theory that this operation will be startling in peak production. The wells have all made some oil, but the nature of the initial production is such it will very likely follow the other pools of central Kansas.

Completions Scattered

The completed wells were scattered. The first (completed 10 days ago) was the Skelly Oil Co. and Davis' No. 1 Wilson, NE cor. NW NE Section 1-26-1w, which was reported last week as good for 400 bbls. daily on the swab. It has now decreased. The first sand record of this well was reported as 3,377-87 feet, at which depth the well made the figure mentioned. The well was drilled last week to a total depth of 3,400 feet, with no improvement, and found mostly shale in the last few feet. The daily output of this well has decreased and it is now off production while preparations are being made to tube and pump it.

This well being two locations south of the Aladdin, Slick and others' No. 1 Smyser, in Section 36-25-1w, is also interesting, as it is in a spot which was believed to have exceptional possibilities. The Skelly Oil Co. and Davis' No. 1 Wilson on the same lease is also a sharp disappointment. It is located SW cor. NE NE, Section 1-26-1w, and it found the regular Simpson sand 3,406-10 feet which looked rather high. The well found a showing of oil and 1,500 feet of water and is now shut down. The performance of both these wells on the Skelly-Davis lease makes the north end of the pool appear rather uncertain, as they were both on locations which were regarded as favorable territory.

East Side of Pool

There were three wells completed on the east side of the pool, and their completion causes no improvement of outlook for that section. All of the wells were drilled by the Gypsy Oil Co. and others. The first was No. 1 T. Goodrich in an odd location on the triangle formed by the railroads in the southeast quarter of Section 6-26-1e. This well is just two locations east of the Marland Production Co.'s No. 1 Branch. The T. Goodrich well had the sand 3,383-89 feet and started flowing 520 bbls. daily naturally. This figure dropped to 229 bbls. in four days, and then the well was put on the pump. It is now pumping 714 bbls. daily. No. 2 T. Goodrich, northwest of No. 1, located in the SE cor. NE SW, Section 6-26-1e, had the Simpson sand 3,372-87 feet and is swabbing 239 bbls. in eight hours. The third well to be completed on this side of the pool is the Gypsy Oil Co. and others' No. 1 Bright B. in another odd location which is about the middle of the south line of the SE NW, Section 6-26-1e. This was the best well completed and flowed 800 bbls. naturally from the Simpson sand 3,366-73 feet.

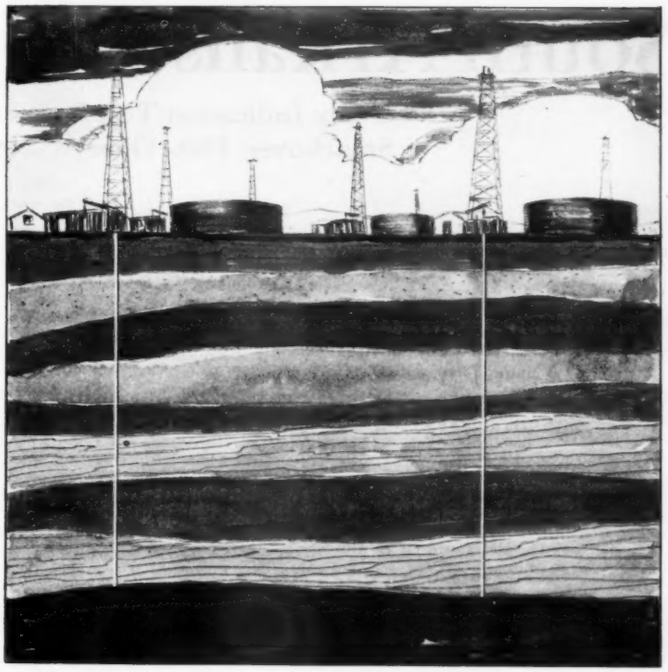
The initial output of all these wells has not resulted in any improvement of the looks of the Sedgwick territory, al-

(Continued on Page 72)

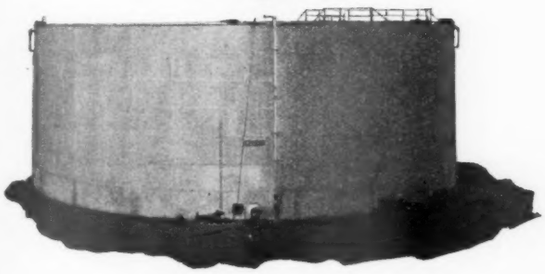
WILDCAT OPERATIONS IN KANSAS

Company, farm and location—	Remarks:
BARBER COUNTY	
Allison & Fitzwilliams' No. 1 Morrisse, C NW SE SE Sec. 9-30-12w	Rig.
Barbara Oil Co.'s No. 1 Blunk, C NE NW Sec. 20-34-13w	Drlg. 5,300 ft.
Barbara Oil Co.'s No. 1 Lytle, CNL NE NE, Sec. 12-33-13w	Drlg. 4,535 ft.
Rolland et al's No. 1 Pickens, NE cor. NW NE Sec. 27-30-14w	Shut down 4,223 ft.
BARTON COUNTY	
Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w	Shut down 3,943 ft.
Mid-West Exploration Co.'s No. 1 Karst, SW cor. SW Sec. 11-16-15w	Drlg. 3,516 ft.
BUTLER COUNTY	
LaRobb et al's No. 1 Bronsenger, NE cor. SW Sec. 24-27-3	Rig.
Aladdin Petroleum Co.'s No. 1 Bronsenger, NE cor. SE Sec. 24-27-3	Rig.
Smith & Ash's No. 1 Donnelly, NE cor. NE Sec. 8-24-6	Spudded.
CHASE COUNTY	
Griener & Fowler's No. 1 Carson, NE cor. NE Sec. 9-21-7	Shut down 3,162 ft.
COWLEY COUNTY	
Roth & Faurot's No. 1 Ridding, SE cor. NW Sec. 31-32-6	Shut down 3,250 ft.
Pyle & Sutter's No. 1 Lindstrom, SW cor. NE Sec. 9-35-4	Shut down 3,380 ft.
J. B. Markey's No. 1 Tatum, SE cor. SW Sec. 11-31-6	Shut down 520 ft.
Wakefield & Osborne's No. 1 Osborne, NW cor. NE Sec. 18-30-5	Rig.
ELLIS COUNTY	
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w	Shut down 1,100 ft.
Finney & Weiner's No. 1 Freeman, SE cor. SW Sec. 24-15-20w	Spudded and shut down.
Labette Oil Co.'s No. 1 Urban, NE cor. NW NW Sec. 19-15-16w	Drlg. 3,830 ft.
Atlantic Oil Prod. Co.-D. B. Mason's No. 1 Gorham estate, C SE SE Sec. 35-15-16w	Drlg. 3,116 ft.
Phillips Pet. Co.'s No. 1 Brull, C NW Sec. 34-14-17w	Drlg. 3,769 ft.
Moncrief et al's No. 1 Johnson, SW cor. NE Sec. 9-13-19w	Rig.
Caracas Group No. 1 Company's No. 1 Gestner, SE cor. SW NE Sec. 13-13-18w	Shut down 1,750 ft., corrected.
Empire Oil & Ref. Co.'s No. 1 Wann, NE cor. NE Sec. 31-12-19w	Shut down 3,850 ft.
EDWARDS COUNTY	
Amerada & Wilcox's No. 1 Teansil, C NW SW Sec. 32-25-19w	Drlg. 4,534 ft.

(Continued on Page 116)



WHY bring oil to the surface only to LOSE IT AGAIN ?



Nature, although lavish in her supply of oil, begins taking it away again through evaporation the minute it reaches the atmosphere.

There is one way to stop this natural tendency. Store your oil so that vapor *loss* is eliminated. You may not be able to change the law of evaporation but you can stop the vapor loss.

For example, a Wiggins Breather Roof on a standing storage tank permits vapor to form above the surface of the oil and it permits this vapor to expand and contract with changes in temperature. Except for seasonal changes and extreme cases, however, this roof does not permit any of the vapor to escape. With an ordinary gas-tight roof on a 55,000-bbl. tank of Mid-Continent crude, the annual evaporation loss runs from 470 to 570 bbls. This is practically eliminated with the Breather Roof, a saving which pays for the additional cost of the roof in 12 to 18 months.

Other types of equipment, such as Wiggins Floating Roofs, Hortonspheres, etc., offered by this company similarly meet other conditions of oil storage. These designs are accepted by leading oil companies everywhere. May we show you a list of users and the extent to which this company's products are in service today?

STOP EVAPORATION LOSSES

with WIGGINS BREATHER ROOFS

CHICAGO BRIDGE & IRON WORKS

DALLAS ..... 3341 Magnolia Bldg.
NEW YORK 3147 Hudson Terminal
CLEVELAND 2204 Union Tr. Bldg.
CHICAGO..... 2128 Old Colony Bldg.
DETROIT ..... 1514 Lafayette Bldg.
PHILADELPHIA 1615 Jefferson Bldg.
SAN FRANCISCO.....1054 Rialto Bldg.
HAVANA, CUBA .....Apartado 2507

O&GJ 3-21-Gray

South Arkansas Wildcat Adds to Flow

Every Indication Test Between Louann Light Oil District and Smackover Has Opened New Pool. Many Acreage Deals

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Mar. 18.—There seems to be no longer any reason to doubt that a new pool in south Louisiana has been opened by C. H. McDonald's No. 1 Wilson in the SE cor. SW SW, Section 25-15-18, Ouachita County, midway between the Louann light oil district of Smackover and the Stephens Field. The wildcat has been flowing by heads for a week and getting better from day to day though the increase is slow. It is listed as a 270-bbl. completion from 6 feet of sand, total depth 2,866 feet, but the last gauge on it was 336 bbls. in 26 hours.

Root refineries ran a laboratory test on the oil which showed, crude 37.7 gravity; 0.4 per cent b.s.; wax 1.2 per cent; gasoline, 26 per cent, 58.9 gravity; kerosene 10 per cent, 39.2 gravity; gas oil 20 per cent, 34.2 gravity; fuel oil 42.8 per cent, 15.7 gravity, cold test 47. The Texas Company is laying 5½ miles of 4-inch line from its Louann gathering system to the well and Louisiana Oil Refining Corp. also is reported arranging to build a 4-inch extension from its Stephens gathering system. Meanwhile, Magnolia Petroleum Co. has made location for the first new test, No. 1 Wilson in the NW cor. SE SW, Section 25-15-18, offsetting McDonald Brothers' No. 1 Wilson on the south. This latter well was the first test in the new field, and is being deepened with cable tools from 2,828 feet where it made a few small heads from 10 feet of sand but would not flow. Just now it is fishing for bit, total depth 2,843 feet at which it is figured 5 feet higher than the new producer a quarter of a mile north.

The Texas Company bought 200 acres in Sections 13, 14 and 15-15-18, a mile or 2 miles north and northwest of the producer for $20 to $30 an acre and three or four days later paid $200 per acre for additional holdings. Root Refineries also got in early and bought 420 acres scattered in Sections 13, 25, 26 and 36-15-18; 30-15-17 and 2-16-18, paying $50,000 cash and $160,000 out of the first oil. Since these two trades prices have taken the familiar skyrocket route, as indicated by The Texas Company's last purchases.

Ohio's Well Holding Up

Meanwhile Ohio Oil Co.'s No. 1 Raulston in Section 12-17-14, Union County, which extended production in the east extension of Champagnolle to the southwest into condemned territory has been holding its full share of attention. Starting at 500 bbls. an hour it has grown to 2,406 bbls. net oil daily through a seven-eighths-inch choke. The fluid had about 12 per cent water when this last gauge was taken but the quantity is steadily decreasing. The company's No. 1 Adams, Section 7-17-13, a half mile northeast of the big well, is shut down at 3,212 feet and may be abandoned at that depth which is approximately 150 to 200 feet below the average depth for producers in that part of the field. The first offset to the Ohio's big well is the Arkansas Natural Gas Corp.'s No. 1 Morris in the SW cor. NW SW, Section 7-17-13, about two locations east.

Over on the west edge of the old deep sand area, Skelly Oil Co.'s No. 2 Kelly, Section 9-17-14, tested 7,000,000 feet of gas with a light spray of oil from 2,790-2,831 feet with sand from 2,821-25 feet and is reaming rathole to run another drill stem test. Oilwell Corp. junked No. 1-D Perdue, Section 9-17-14, at 700 feet, skidded 20 feet north, set 10-inch at 120 feet and is drilling at 1,500 feet on the second hole. Rovenger Corp.'s No. 2-B Perdue in the same section looks like another failure, testing dry at 3,215 feet and salt water from 3,310-16 feet after getting salt water on a drill stem test in a shallow lense at 2,850-55 feet.

Shell Petroleum Corp. is deepening several of its Graves sand producers in the Union County end of Smackover and Gulf Refining Co.'s No. 8 Goodwin, Section 32-15-15, Ouachita County, had a show of oil, gas and salt water at 2,573 feet, total depth 2,590 feet; No. 9 Goodwin in Section 5-16-15, is waiting orders after a salt water test at 2,576 feet.

Champagnolle Completions

Besides the Ohio's Raulston well, Champagnolle had two other completions, Magnolia Petroleum Co.'s No. 2 Gregory, Section 15-17-14, pumping 35 bbls. total depth 2,828 feet, and the other the Magna Production Co.'s No. 2 El Dorado Realty Co. in the NW cor. NW SW, Section 8-17-13, the farthest southeast well in the district, junked at 3,238 feet after cementing bottom and whipstocking.

M. Meyer abandoned location for No. 1 fee in Section 31-16-11, Elm Grove district of Bossier Parish, La., and Dixie Oil Co. dropped No. 81 Dillon, Section 13-21-15, Pine Island district of Caddo, as a dry hole at 4,148 feet where it had been standing for a year after deepening from 3,647 feet where it was a big gasser, 35,000,000 feet, on May 12, 1927. Dixie also abandoned No. 4 Huckaby, Section 11-21-15, which had been shut down at 4,037 feet for a like period. Natural Gas Producing Co. of Louisiana's No. 23 Crossett, Section 26-21-4, Morehouse Parish, gauged 10,000,000 feet of gas at 2,190 feet and Southern Carbon Co.'s No. 11 Fairbanks, Section 33-20-4, Ouachita Parish, made 8,000,000 feet, total depth 2,140 feet. The Bethany district of Panola County, Texas, added The Texas Company's No. 10-B Adams, Isom Hatcher, to the available gas making 1,392,000 feet at 296 pounds, total depth 979 feet.

Smitherman & McDonald probably will abandon the Haynesville deep test, No. 1 Miller in Section 17-23-8, in which the Gulf Refining Co. took a half interest some time ago and also superintended the drilling after the hole reached 4,600 feet. At a total depth of 4,780 feet they were unable to bail down below 2,000 feet from the top, the salt water flow coming presumably from 4,595 feet where the last test, 10,000 feet of gas with water, was made.

J. W. Clark's No. 2 Mayfield in Section 20-23-9, Shongaloo district of Webster Parish, looks like another small pumper such as Richardson and others got on the same lease several months ago. With the bottom 4 feet in sand, total depth 2,767 feet, it is standing with 600 feet of oil in the hole and probably will be standardized.

Daily average runs from the field showed an increase of 1,320 bbls. due mostly to the Ohio's big well in Champagnolle which raised that pool's figure to 9,775 bbls. Daily average runs from the field for the several pools were:

Louisiana	
Caddo, light	8,870
Caddo, heavy	3,345
Homer	4,005
Haynesville	6,510
DeSoto-Red River	3,940
Elm Grove	620
Bellevue	640
Cotton Valley	3,000
Urania	6,010
Pleasant Hill	400
Sarepta-Cartersville	300
Total	36,040
Arkansas	
El Dorado	4,565
Smackover, light	6,430
Smackover, heavy	49,870
Stephens	1,000
Nevada County	1,230
Lisbon	1,480
Champagnolle	9,775
Bradley	300
Total	74,520
Both states	110,560
Last week	109,240
Increase	1,320

NORTH LOUISIANA

Bossier Parish

Bellevue—R. L. Cook set 6-inch at 375 feet on No. 10 Larkin, Section 14-19-11, and is waiting for standard rig to pump from 2 feet of sand, total depth 385 feet.

Caddo Parish

Greenwood—Eastern Carbon Co.'s No. 4 Bryson, Section 8-17-16, is drilling at 2,200 feet.

Oil City—Magnolia Petroleum Co.'s No. 18 Dian-Thigpen, Section 6-20-15, is drilling at 1,620 feet. Shreveport Oil Corp. made location and set 10-inch at 80 feet on No. 2 Guy, 2,600 feet west and 900 feet south NE cor. Section 32-21-15. Simplex Oil Co. is rigging up to drill No. 4 Baird, 1,264 feet west and 800 feet south NE cor. Section 22-20-15. Snake Creek Oil Co.'s No. 1 Levee Board, Section 9-21-16, is coring at 2,315 feet.

Pine Island—Magnolia Petroleum Co., deepening No. 18 Dillon, Section 24-21-15, is arranging for a drill stem test at 3,995 feet.

Claiborne Parish

Smitherman & McDonald's No. 1 Miller, Section 17-23-8, is shut down at 4,780 feet waiting orders.

LaSalle Parish

Urania—Arkansas Natural Gas Corp. set 6⅝-inch casing at 1,506 feet on No. 10-B Urania, Section 17-10-2e, and has 600 feet of oil in the hole from 1,518 feet and is running tubing with packer. Kinney and others' No. 1 Kinney, Section 7-10-2e, set 600 feet of 6-inch and is arranging to test 4 feet of sand, total depth 619 feet. Randall and others set 6-inch at 635 feet on No. 4 Urania, total depth 675.

Little Creek—H. L. Hunt's No. 5 Urania, Section 2-9-1e, is waiting for standard rig to pump with 1,200 feet of oil in the hole from 6 feet of sand, total depth 1,500 feet. Montague Oil Co.'s No. 7 Zenoria, Section 11-9-1e, set 100 feet of 10-inch, lost the drill stem and is fishing at 400 feet.

Monroe District

Morehouse Parish—Interstate Gas Co. made location 2,695 feet east and 950 feet south NW cor. Section 31-21-5, for No. 1 Crowder-Moore. Natural Gas Producing Co.'s No. 24 Grossett is a location 2,640 feet south NW cor. NE NE Section 25-21-4. Southern Carbon Co. set 796 feet of 8-inch on No. 2 Miles, Section 1-20-4, and is drilling at 1,440 feet; No. 9 Tensas, Section 2-20-4, set 10-inch at 148 feet and 8-inch at 806 feet.

Ouachita Parish—Imperial Oil & Gas Products Co. has location 2,030 feet north and 1,450 west SE cor. Section 11-

(Continued on Page 126)

LOUISIANA OPERATORS WATCHING CLOSELY THREE WILDCAT TESTS

By D. H. Bancroft

SHREVEPORT, La., Mar. 18.—Three wells divided attention given wildcat tests this week. R. L. Gray's No. 2 Bowman-Hicks in Sabine Parish; Woodley & Collins, No. 1 Harp in Morehouse Parish, and Jack Moffatt's No. 1 Ball in Section 29-7-1w, Grant Parish. Because it was drilled on a "petrolometer" location, Moffatt's well was the object of considerable attention from the geologists, who have been waiting such a test before turning thumbs up or down on the newest of the scientific "witchers." They have had two chances now to approve or disapprove. The first was on a well in Mississippi which was reported to have developed considerable of a show at the depth predicted by advocates of the petrolometer. It was predicted that oil-bearing sand, which the petrolometer's inventor declares is the only formation that will not reflect sound, would be found at around 1,500 feet. Moffatt is drilling red shale at 1,875 feet and has not found any sand yet, oil bearing or otherwise.

R. L. Gay bailed No. 2 Bowman-Hicks, Section 14-7-14, Sabine Parish, at 2,560 feet to test a slight oil show and got salt water, about 10 bbls. per day, with a small show of gas, enough to shove part of the mud out of the drill stem. No. 1 Sabine Lumber Co. is drilling at 2,740 feet.

Woodley & Collins' No. 1 Harp, Section 22-22-7, Morehouse Parish, with the same surface elevation as The Texas Company's No. 1 Myers, the nearest producer that was so much in the limelight last summer, topped the chalk at 2,469 feet whereas the Myers well found it at 2,508 feet. The Woodley well cored the gas rock proper at 2,483-85 feet and drilled to 2,512 feet, a drill stem test from the top of the true gas rock being dry with no show of gas, oil or salt water, and another test is scheduled for 2,530 feet. On this check—39 feet higher than The Texas Company well a short distance away—they are expected to top the red beds at 2,715 feet and the deep sand The Texas Company well got at 2,900 feet at 2,855 feet. It is one of the most interesting wildcats under way at present in the entire division and is holding a great deal of attention.

Interesting Geology

Another interesting situation is presented in East Carroll Parish where Palmer Corp. is drilling No. 2 O'Brien, Section 6-19-11, with 9-inch cemented at 908 feet, the location being about a quarter mile northwest of the 51,000,000-foot gas well the same company completed a year or so ago. Incidentally, No. 1 O'Brien is showing more or less water when opened. There is a torsion balance high centering around Section 13-19-10, and magnetometer high centering on Section 21-19-11. This, with the logs of the No. 1 O'Brien and the two other wells Palmer has drilled in this locality showing such wide variations as they do, presents a most interesting situation productive of considerable geological information whether or not it ever produces a commercial well, either oil or gas. It is sufficiently interesting to warrant the Palmer offering Shell Petroleum Corp. $50 an acre for its acreage in East Carroll, approximating 2,300 acres, for the gas rights. Shell is reported blocking around Section 3-20-7, Morehouse Parish, in adding to its holdings in that part of the country, but this has been denied. At any rate, Shell is busy with a lot of title work in Morehouse. Further west in the Monroe district, Arkansas Natural Gas Corp. is reported

(Continued on Page 125)

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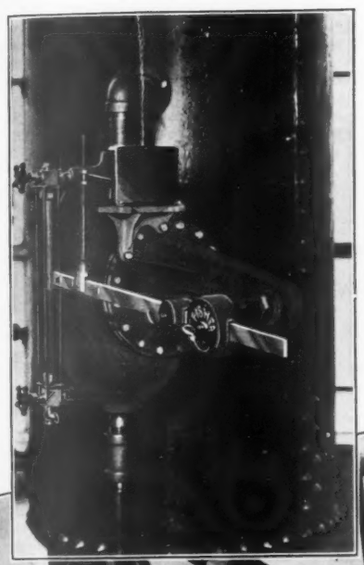

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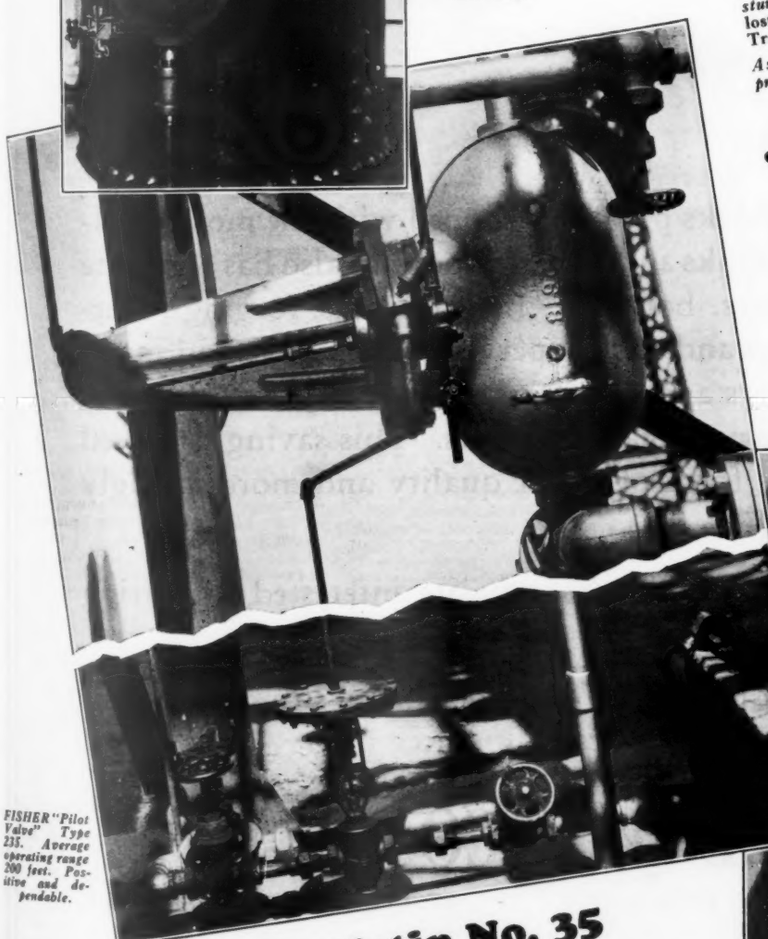

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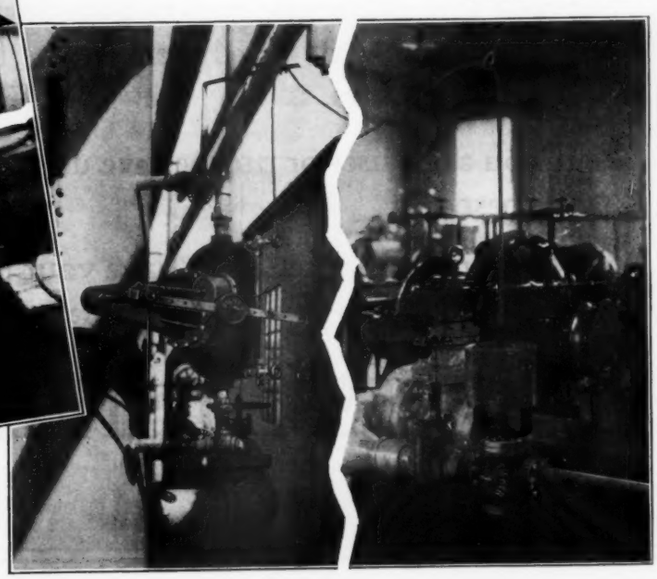

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Write for Bulletin No. 35

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Good Completions in Southwest Texas

Northeast End of Joe Bruner Pool Active. Magnolia's Well in Schoolfield-O'Byrne Pool Attracts Attention

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Mar. 18.—Heavy rains the first of last week over most of Southwest Texas resulted in shutting down nearly everything for a period of three or four days. There were some important completions in the northeast end of the Joe Bruner Field. Also, one completion in the Schoolfield - O'Byrne Pool in northwest Duval County; and two more tests in the Refugio district, one a mile west of production that blew out and ran wild as a gasser for a day at 2,400 feet and another 5 miles northwest that showed considerable gas at the same depth. Withal it was a fairly average week for the district.

United Gas Co. (Moody-Seagraves) has bought out the Mission Drilling Co. in the Refugio Field and elsewhere and will make the company the oil producing subsidiary of the United Gas Co. The Mission Drilling Co. the week before had bought out Pat Rutherford, Inc., property in the Refugio Field, consisting of two rigs and some leases, and these operations now all go under the Mission Drilling Co.'s name. The company is moving a rig to the Hewitt leases in Beeville recently purchased by the United Gas Co.

Golden West's refinery in the Ina Field in Medina County is now gathering headway and considerably reduced the crude in storage in that field to such an extent that arrangements are being made to drill additional wells, both by the Golden West and others. There is no gasoline in this oil. It is a lubricating oil proposition.

Club Open; Geologists Active

Features of interest in a general way are the informal opening of the San Antonio Petroleum Club on the second floor of the Milam Building today and the formal opening to take place next Monday. Furniture and furnishings in the club rooms, it is said, cost $15,000, and the rooms are described as being as fine as any in the country.

Also geologists from San Antonio attending the annual meeting of the American Association of Petroleum Geologists at Fort Worth this week backed by the Chamber of Commerce of San Antonio are making an effort to get the next convention set for San Antonio.

Turning to field work, Magnolia Petroleum Co.'s No. B-5 Hahl in the Schoolfield-O'Byrne Pool in northwestern Duval County came in last week flowing 1,200 bbls. a day through a half-inch choke. It later developed about 200 bbls. of water to 1,000 bbls. of oil. This well is west of the company's No. B-2, which came in for big production and is the farthest west well at the north end of the field, all five wells of the company on that lease being in a line east and west. No. B-1 Hahl was a rather small well of 35 bbls. No. B-2 is 300 feet west and came in estimated at first at 3,000 bbls., but proved somewhat smaller than that. No. B-5 is 300 feet west of No. 2. On the east of B-1 is B-3 at a distance of 300 feet, a 25 bbl. well, and 300 feet east of that No. B-4, a 10-bbl. well. Nos. B-2 and B-5 are the biggest wells in the field thus far and the farthest to the west. Thus far the field has not shaped up sufficiently that the map will indicate how big or what direction it will take.

Joe Bruner Field

In the Joe Bruner Field, Gulf Production Co. completed its Nos. 3, 4 and 5 Martin Tiller and its No. 3 R. W. Carter, all good for about 250 bbls. Humble Oil & Refining Co. drilled its No. 2 Johnson deeper and increased it from a small well to one of about 1,000 bbls. The Shell Petroleum Corp., with its No. 5 Malone at 2,675 feet and in the Georgetown, swabbed 105 bbls. in five hours and had No. 6 Malone ready to drill in and brought in No. 7 Floyd Tiller for about 350 bbls. a day. All of these are in the northeast end of the field. In the southwest end of the field, Forest Oil Co.'s No. 1 Fleming had only 14 feet of chalk and topped the Edwards lime at 2,716 feet, and at 2,724 feet was ready to drill in Saturday with chances of making an oil well.

In the Joe Bruner area there is developing some interesting play with the chances yet that the field will run out to 14 miles in length and will be four to six derricks wide. The deepening, with bigger production resulting, of the Humble Oil & Refining Co.'s No. 2 Johnson is probably one of the biggest events of the week. Operators are not through with the idea that there are additional structures in that country that are going to "pay off" and pay off well. Opinion is shared commonly that there is another between the old Luling Field and the new Joe Bruner Field and M. O. Rayor is now drilling No. 1 Robinett, a little more than a mile up from the San Marcos River on the Caldwell County side and midway between the two fields. It is 150 feet from the southwest and southeast lines of the Miles C. Dykes Survey. It is worth watching. Majors have taken acreage in the block and the existence of a fault line in proximity to the test has been proven by wildcats drilled.

Laredo District

Magnolia Petroleum Co.'s No. B-5 Hahl was one of the features of the week in the Laredo area and the line-up of the five wells at the north end of the Schoolfield-O'Byrne Pool seems to indicate that the production lays in the west. It will mean much in watching the further drilling, as there are only a few wells completed in the field thus far.

Next to it is the 15,000,000-foot gas well of William F. Morgan, No. 1 King-Harper, at the north end of the Cole gas field. It was drilled to get oil. Sand depth is 1,751-66 feet. While it failed to make oil it will not likely entirely stop the efforts to find oil production in that part of the gas field, since two or three tests drilled in that territory have all but made producers.

There are two other completions in the Laredo district the past week. O. W. Killam got 35,000,000 feet of gas in his No. 6 Bruni in sand at 2,354-60 feet, half way between the old Cole gas pool and the new Magnolia-Cole oil pool and near the station of Bruni. J. G. Mackay got 25,000,000 feet of gas in his No. 1 Richardson, several miles north of the Cole gas field. This last at 1,770-75 feet was reported as a big gasser a week ago on a drill stem test.

Refugio Field

Features in the Refugio Field were the Houston Gulf Gas Co.'s No. 1 Rocke a mile west of the nearest production, which at 2,400 feet blew out a gasser and ran wild for a day, damaging the derrick. It will be plugged and another hole started a few hundred feet from it. The field has been springing more or less important surprises ever since it was discovered. The Blanco Creek Oil Co.'s No. 1 St. John, 5 miles northwest of the field, has an important showing of gas at about 2,400 feet, and the Houston Gulf Gas Co.'s No. 4 O'Brien, the farthest north in the field, blew out recently with gas at 2,420 feet.

Houston Gulf Gas Co. is going back into "Hell's Acreage" on the south end of the Lambert tract and will drill No. 8 Lambert. The acreage got its name locally, due to the large number of blow-out sand craters in it.

COMPLETIONS

Bastrop County

Gulf Production Co.'s No. 1 A. M. Yoast, A. Garcia Survey, completed at 1,571 feet making 17 bbls.

Bexar County

Amelia Balzart's No. 1 Adams, Cortari Survey No. 5, at 700 feet is estimated good for about 4 bbls.

Duval County

Magnolia Petroleum Co.'s No. B-5 Hahl, Survey 61, in Schoolfield-O'Byrne Field completed at 2,342 feet flowing 1,200 bbls. of fluid, of which 1,000 bbls. is oil.

Webb County

J. G. Mackay's No. 1 Richardson, Survey 5, completed at 1,768 feet making 25,000,000 feet of gas with 460 pounds rock pressure.

W. F. Morgan's No. A-1 King-Harper, Survey 323, completed at 1,766 feet making 15,000,000 feet of gas.

O. W. Killam's No. 6 Bruni, Survey 3, completed at 2,360 feet making 35,000,000 feet of gas.

ABANDONED TESTS

Bastrop County

Gulf Production Co.'s No. 2 Yoast, A. Garcia Survey, has been abandoned dry at 1,568 feet.

Judge Batts' No. 1 White, 2 miles northwest of discovery well in Yoast Field, has been abandoned at 2,143 feet with fishing job.

Duval County

Humble Oil & Refining Co.'s No. 19 Kohler, Survey 396, has been abandoned dry at 1,910 feet.

Zapata County

Killam-Duggan's No. 4 Cuellar, Cerrito Blanco grant, has been abandoned and plugged at 1,473 feet after being plugged back from 2,087 feet as casing seat failed to hold.

NEW LOCATIONS MADE

Bastrop County

The Texas Company's No. 4 Yoast, A. Garcia Survey, is location 300 feet east of No. 3.

Bexar County

Schimmel Production Corp.'s No. 1 H. F. Gayle, C.E.P.I.&M. Survey, Block 2, is location 250 feet to west line and 895 feet to south line.

Caldwell County

Shell Petroleum Corp.'s No. 6 R. W. Malone, A. Floyd Survey, location 700 feet to south and east lines.

The Texas Company's No. 2 J. Moore, J. Gilbert Survey, location 600 feet to northwest lines, 1,600 feet to southwest lines.

Duval County

G. M. Partee's No. 1 Moody, Survey 60, location 150 feet to north and west lines is rigging up.

Sun Oil Co.'s No. 3 Norton, Survey 250, Block 16, location 750 feet to east line, 150 feet to north line, is rigging up.

Magnolia Petroleum Co.'s No. 1 Hahl, Survey 60, is rigging up 150 feet to north line, 750 feet to west line.

Simms Oil Co.'s No. 4 Dinn, Survey

(Continued on Page 68)

MAVERICK COUNTY WILDCAT MAKES WATER; WATCHING GONZALES TEST

By B. D. Stevenson

SAN ANTONIO, Tex., Mar. 18.—Rycade Oil Corp.'s No. 3 Chittim in Maverick County is making a lot of water. It is swabbing about 100 bbls. of oil with considerable water in the hole. It is only a short distance into the Edwards but deepening in the Edwards after water is found would be expected to get more water and not less. There is considerable open hole and the water might be coming from above. There is a feeling that the Rycade has not yet found the pool but there is also a feeling that the pool is there somewhere. The water it is showing is salt water.

The other wildcat area being watched closely is the area around the Empire Gas & Fuel Co.'s No. 1 Norwood, in Gonzales County, southeast of the city of Luling. The well is making about 140 bbls. of oil a day but all the holes drilled around it thus far have been dry. Of course there have been but three holes drilled. Cranfill & Reynolds' No. 1 Webb was about 500 feet southeast of the No. 1 Norwood; Indian Petroleum Co.'s No. 1 Karnstadt was nearly a mile due south; and the Empire Gas & Fuel Co.'s No. 1 Riverbed was nearly a mile southwest. This and No. 1 Karnstadt were too far away to prove much. So far as dry holes are concerned there is plenty of room yet for a pool.

Laredo District

W. G. French has spudded in the first of 10 tests to be drilled on a 25,000-acre tract known as the Riley Allen ranch in the southwest corner of Brooks County and extending over into the other two adjoining counties. The contract calls for two 3,000-foot tests and eight 1,500-foot tests. The block is a big one and thought to have a structure on it and the drilling is with a major interest to have the territory tested.

Guadalupe County

J. J. Christie's No. 1 Taylor Thomas, a few miles southwest of Staples in the northern part of Guadalupe County, cored last Friday at 1,242 feet, the core being about 8 inches and showing a trace of gas and trace of oil. The well got the formations thinner than normal from the Austin chalk down and hence is getting the Edwards relatively high. It was in hard Edwards at 1,243 feet and expecting when it softened up to get production.

Joe Bruner, who brought in the first producer in the Joe Bruner Field, has a showing of oil at 815 feet in his wildcat No. 1 Miller north of Waelder in Gonzales County. It is in the Cook Mountain topped at around 550 feet.

A. D. Gibbs of Tulsa is invading Kendall County where no wildcatting has been done for some time. On a 40,000-acre lease block he has contracted with Pat Armstrong to drill two wells and the rig is moving in now for the first one, which will be a 2,000-foot test. The test is about the center of the county and southeast of Sisterdale.

Crown Petroleum Co. of Dallas has erected a 112-foot derrick and is moving in a rig in southern Gonzales County to drill No. 1 Hattenbach in the James Jones Survey on the Nopal structure.

Duval County

National Oil Co. is using magnetometer to check and has made location for No. 2 Ball. O. Henry Oil Co.'s No. 1 Henry, Block 1,879, located 450 feet

(Continued on Page 71)

Deep Sand Well in South Humble Area

Flowed at Rate of 1,000 Bbls. for Three Hours. Two More Wells in Old Hackberry Dome. Second Producer at South Liberty

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Mar. 18.—Further interest in the deep sand possibilities on the south side of the Humble Field, just north of Houston, was revived when South Texas Petroleum Co.'s No. 3 Morris blew in making a heavy flow of pipe line oil. As the well flowed only three hours before sanding up, no real check can be made of its production, but it is estimated that it flowed at the rate of 1,000 bbls. an hour for those three hours.

Although the well so far is a disappointment so far as a successful completion is concerned, yet it indicated a very prolific production in the deep sand opened several months ago by the same operator, whose No. 1 Morris came in flowing at the rate of 5,200 bbls. daily. This well still is flowing at the rate of 1,480 bbls. daily, an exceptionally good record considering the high gravity of the oil.

No. 3 Morris blew in before screen could be set in the hole which was in a shale formation at a total depth of 4,831 feet. Preparations were being made at the time to set eight joints of spaced 6⅝-inch screen. This well is several hundred feet to the southwest of No. 1 Morris and also of No. 2 Morris, also a deep sand well. No. 1 found the sand at a total depth of 5,347 feet. Gravity of the oil in each of the wells is 42 degrees, the highest by far of any crude obtained at Humble.

No. 3 at this writing is being cleaned out in an attempt to set screen. That some trouble may be experienced in this and in bringing the well back in is the opinion of operators considering the fact that the bottom of the hole is believed to be in heaving shale. A string of 9¼-inch casing is set at 4,110 feet.

Old Hackberry Dome

Late developments in Gulf Coastal fields also included the completion of two more wells on the south side of the old Hackberry Dome, Cameron Parish, Louisiana, as the result of the active drilling program under way there following the recent opening of the first commercial production. Each of the new wells, Federal Oil Co.'s No. 2 Kaough and Moon Oil Co.'s No. 2 Sanner, is flowing an estimated 1,000 bbls. daily.

Federal Oil Co.'s well is a west offset to Moon Oil Co.'s No. 1 Sanner, the second producer in the field, while Moon Oil Co.'s No. 2 Sanner is a location north of No. 1. These wells are slightly over a quarter mile to the northeast of the discovery well, Cameron Oil Co. and Rycade Oil Corp.'s No. 2 Duhon. The latter operators' No. 3 Duhon, to the northeast of No. 2, also came in during the week flowing by heads an estimated 50 bbls. daily from sand at 3,078 feet. Federal's No. 2 is at a total depth of 3,261 feet, and Moon's No. 2 Sanner at 3,118 feet. Federal Oil Co. also has another test, No. 1 Kaough, waiting to test, it being at a total depth of 3,240 feet with casing cemented at 3,177 feet.

South Liberty Producer

Completion of a second producer in the newly opened shallow sand pool on top the south Liberty Dome also figured in the week's news. This was Fort Bend Oil Co.'s No. 1 Reviere, which came in flowing initially 250 bbls. daily, but which later increased to an estimated 800 bbls., from sand at 2,177-96 feet. This is a north offset to the discovery well, Navarro Oil Co.'s No. 1 Community Baldwin. Five tests now are getting under way in this area.

Clay Creek, Washington County, added two more producers during the week and with a daily average pinched in production of 3,500 bbls. it is taking its place as one of the Coast's main fields, although only a comparatively few months old. Sun Oil Co.'s No. 6 G. F. Grote came in from a sand at 1,225 feet flowing an estimated 1,000 bbls. daily, and the same company's No. 2 C. Einman was completed as a 200-bbl. pumper at 1,251 feet.

Spindletop Completions

Spindletop led in the number of completions with five, having an initial daily production of approximately 3,700 bbls. These wells were: Yount Lee Oil Co.'s No. 93 McFaddin, 1,100 bbls., 2,521 feet; No. 82 Gladys City, 1,000 bbls., 3,074 feet; No. 81 Gladys City, 1,200 bbls., 3,252 feet; No. 90 McFaddin, 90 bbls., approximately 2,500 feet; and No. 95 McFaddin, 340 bbls., approximately 2,500 feet.

Other completions were: Humble Oil & Refining Co.'s No. 2 Camp, DeWalt, flowing 1,500 bbls., 3,610 feet; The Texas Company's No. 18 Staiti, Liberty, pumping 325 bbls. daily, 1,651 feet; Sun Oil Co.'s No. 39 Mitchell, Liberty, flowing 500 bbls., 1,776 feet; Gulf Production Co.'s No. 3 Tom Hogg, West Columbia, a workover, flowing 250 bbls., 3,049 feet; Paraffine Oil Co.'s No. 45 Knight, Batson, pumping 6 bbls. net oil, 846 feet; Republic Production Co.'s No. 127 Dolbear, Hull, a workover, pumping 600 bbls. fluid, 25 per cent water, 1,979 feet; Sinclair Oil & Gas Co.'s No. 4 Granger, Orange, a workover, flowing 700 bbls. net oil, 3,590 feet; Gulf Production Co.'s No. 10-A Deussen, Liberty, a workover, pumping 150 bbls. of fluid, 10 per cent oil, 3,275 feet; Atlantic Oil Producing Co.'s No. 20 Gaillard, Goose Creek, a workover, pumping 200 bbls. of fluid, 70 per cent water, 2,851 feet, and Vacuum Oil Co.'s No. 23-A Miller, Lockport, 10,000,000 feet of dry gas, 320 pounds rock pressure, 1,094 feet.

Increase in Production

The steady addition of new production the past several weeks was reflected again in Gulf Coast production figures last week with an increase of 4,544 bbls. in the daily average. The total daily average for the week was 148,981 bbls., the highest it has been since June, 1927. Fields which figured chiefly in substantial increases the past week included Barbers Hill, where the new deep sands are being developed both on the southeast and southwest flanks, Clay Creek, Washington County, and Pierce Junction, Harris County.

Southwest Texas production fell off slightly, a decrease of only 640 bbls. being indicated. Figures by fields for both the Gulf Coast and Southwest Texas are:

GULF COAST

Texas

Allen	30
Barbers Hill	8,200
Batson	1,405
Big Creek	4,466
Blue Ridge	3,672
Brenham	150
Boling	2,097
Clay Creek	3,148
Damon Mound	650
DeWalt	9,458
Fannette	749
Goose Creek	6,594
High Island	1,556
Hull	10,437
Humble	5,059
Jasper	10
Markham	380
Nash	600
North Dayton	490
Orange	3,375
Orchard	71
Pierce Junction	13,289
Raccoon Bend	1,787
Saratoga	949
Sour Lake	2,744
South Liberty-South Dayton	6,801
Spindletop	34,357
West Columbia	7,276
Total	129,800
Total previous week	126,106
Increase	3,694

South Louisiana

Anse La Butte	40
Bayou Bouillon	210
Edgerly	871
Jennings	814
Hackberry	4,678
Lockport	4,293
Sorrento	559
Starks	524
Sulphur	2,000
Sweet Lake	375
Vinton	4,787
Welsh	30
Total	19,181
Total previous week	19,331
Decrease	150
Total Gulf Coast	148,981
Total previous week	144,437
Increase	4,544

Southwest Texas

Dale	604
Bruner	29,231
Gonzales	90
Kingsville	281
Larremore	236
Luling*	12,596
Lytton Springs	1,143
Maverick	....
McMullen	65
Medina	25
Miranda	12,312
Refugio	1,240
Somerset	1,885
Yoast	2,023
Total	61,731
Total previous week	62,371
Decrease	640

*Includes: Caldwell County, 8,434 bbls.; Guadalupe County, 4,162 bbls.

Miscellaneous Fields

At Markham, Rycade Oil Corp. and Humble Oil & Refining Co.'s No. 6-A Kountze is drilling sand, lime and shale at 2,271 feet. South Texas Petroleum Co.'s No. 1 Meyers, Markham, is in shale at 1,120 feet. Gulf Production Co.'s No. 18 Moore, Orchard, is drilling hard sand at 3,498 feet. Yount Lee Oil Co.'s No. 4 Louisiana Petroleum Co., Anse La Butte, is drilling sand and shale at 3,925 feet. Pure Oil Co.'s No. 8 Yount Lee Oil Co., Sweet Lake, Cameron Parish, Louisiana, is drilling sand showing oil at 4,160 feet. The latter's No. 7 Yount Lee Oil Co. is trying to sidetrack to deepen from its present depth of 4,594 feet.

MISCELLANEOUS WILDCATS

Texas

Brazoria County—Humphreys Corp.'s No. 1 Bryan, Bryan Heights, is drilling shale at 2,305 feet. Shell Petroleum Corp.'s No. 3 Reece, Allen Dome, drilled into salt and has been abandoned at 5,121 feet. Empire Gas & Fuel Co.'s No. 2 Block, Stratton Ridge, also has been abandoned in cap rock at a total depth of 3,711 feet.

Calhoun County—B. F. Thompson's No. 1 Thomas, 10 miles west of Port Lavaca, is drilling red gumbo at 2,636 feet.

Chambers County—Pure Oil Co.'s No. 1 Mayes, Lost Lake, was setting screen preparatory to testing as the week closed. The 8¼-inch plug was drilled out at 2,041 feet. Total depth of the hole is in oil sand at 2,701 feet. An attempt was made to take a drill stem test which showed dry gas. Pure Oil Co.'s No. 2 Lost Lake has been abandoned at 4,119 feet in anhydrite.

Fort Bend County—South Texas Petroleum Co.'s No. 1 Hartfield, Needville, is drilling sand rock at 6,390 feet. Gulf Production Co.'s No. 14 Wolf, Long Point, has been abandoned in gyp and pyrites at 639 feet.

Galveston County—Republic Production Co.'s No. 1 Lobit, Dickinson, is drilling shale at 4,439 feet.

Harris County—Humble Oil & Refining Co.'s No. 1 Minnetex, Mykawa, is drilling shale at 5,723 feet. This company's No. 5 Warren, Hockley, is drilling hard sand at 3,090 feet. Little York Oil Co.'s No. 1 Davis, H.&T.C. Survey, Block 1, Section 5, is drilling shale at 2,410 feet. South Texas Petroleum Co.'s No. 1 Hicks, Almeda, has been abandoned at 4,412 feet in sticky shale.

Jackson County—The Texas Company's No. 1 Moore, D.&G.N. Survey No. 311, north of Edna, is drilling limestone at 3,382 feet.

Jefferson County — Gulf Production Co.'s No. 6 Bordages, Fannette, is in sand and shale at 5,278 feet. No. 7 is drilling shale at 1,643 feet and No. 11 Thomas is in rock at 2,120 feet. Shell Petroleum Corp. is building derrick for No. 1 Heisig, T.&N.O. Survey No. 80. The Texas Company's No. 1 Pipkin, Big Hill, has cleaned hole in a fishing job and is ready to start drilling deeper from 4,975 feet. Yount Lee Oil Co.'s No. 1 Nona Mills, Hillebrandt Survey, is drilling shale and lime at 3,425 feet.

Liberty County—Humble Oil & Refining Co.'s No. 4 Sterling, Moss Bluff, is drilling gumbo at 508 feet. The Texas Company's No. 2 Davis, Davis Hill, is drilling sand showing salt water at 3,190 feet. Union Exploration Co.'s No. 2 Esperson, Fisher Survey, is preparing to make a drill stem test of a sand showing oil at 3,944 feet.

Matagorda County—Crossland and associates' No. 1 Murphy, Shepherds Mott, has cemented 9⅝-inch casing in lime and shale at 3,852 feet. Griffith and associates' No. 1 Culver, Citrus Grove, is drilling lime and gumbo at 1,997 feet.

Orange County—The Texas Company's No. 1 Kuhn, Port Neches Dome prospect, is drilling gumbo at 1,230 feet. Veteran Oil Co.'s No. 1 Reed, east of the Orange Field, has resumed drilling and is reported drilling below 2,531 feet.

Washington County—Sun Oil Co.'s No. 2 J. Grote, Clay Creek, is fishing bit at 2,100 feet. No. 2 Witt, same field, has been spudded in. No. 1 Schlottman is down 111 feet where 10-inch surface casing has been run. A rig is up for No. 2 Schirmer.

South Louisiana

Ascension Parish—Gulf Refining Co.'s No. 1 Belle Helene, Darrow Dome, is drilling ahead in gumbo at 1,115 feet after setting a string of 10-inch surface casing. This company's No. 11 United Land Co., deep test at Sorrento, is drilling below 3,350 feet. The latter was located with the intention of missing the cap which has been encountered in other tests between 1,600 and 1,700 feet. Triumph Oil Corp.'s No. 2 Lacey, southeast of the town of Sorrento, is drilling at 2,117 feet.

Cameron Parish — Shell Petroleum Corp.'s No. 6 Watkins, Black Bayou, is drilling blue shale and lime at 3,339 feet. This company's No. 8 Watkins is in anhydrite at 1,090 feet and is to be abandoned. The Texas Company's No. 3-A Calcasieu Lake, Calcasieu Lake Dome, is building derrick.

Iberia Parish—The Texas Company's No. 3-A Vermillion Bay is washing at 4,279 feet. It is drilling in rock topped at approximately 4,000 feet. Gulf Refining Co.'s No. 1 Moresi, Loreauville, is drilling lime and sand at 2,643 feet. The latter's No. 3 Kling, same field, is drilling sand and pyrites at 3,702 feet.

Iberville Parish — Shell Petroleum Corp.'s No. 13 Wilbert, White Castle, is resetting casing preparatory to resuming

(Continued on Page 127)

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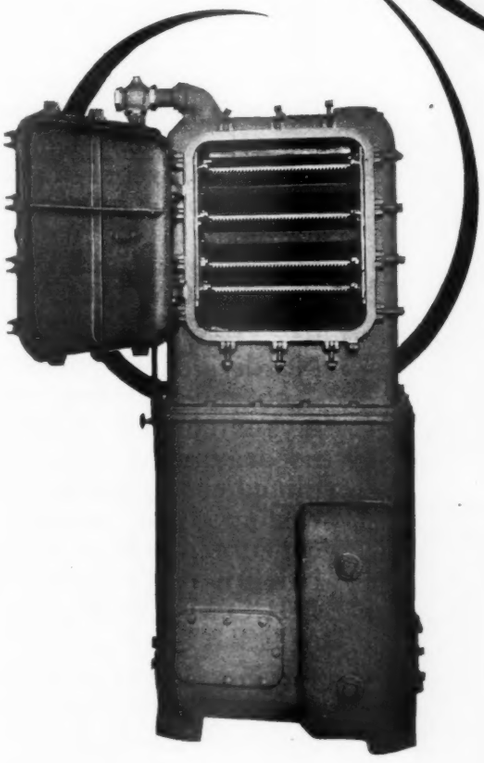

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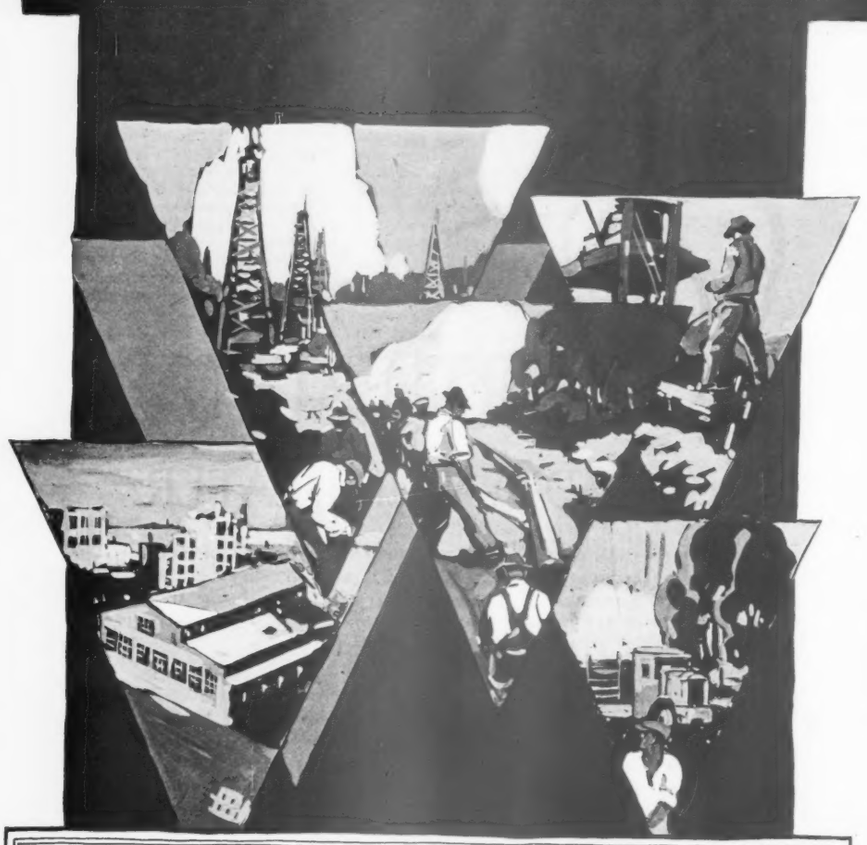

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Pueblo Operation Center of Interest

Wellington Dome Extended Quarter Mile South. Water Well at Loveland Turns to Oil. New Mexico Disappointment

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Mar. 16.—Colorado supplied the most interest for oil men this week with the Vineland operation southeast of Pueblo being the principal attraction. A check showed that 2,780 automobiles were at the discovery well last Sunday. Six wells are drilling, eight others are getting under way and locations have been made for nine more though the discovery well has been standing for 60 days without being tested. The Continental Oil Co. completed a 300-bbl. well in its No. 2 Elder on the Wellington Dome in Larimer County, extending the proven area one-fourth of a mile to the south. A well in the heart of Loveland, which has been spouting drinking water for 34 years, began making some oil a few nights ago and the crude came out in a solid stream long enough for samples to be taken. Denver and Colorado Springs parties have blocked up 24,000 acres near Fountain, in El Paso County, and will drill two tests. Core drilling to work out a structure is planned southeast of Loveland by another firm. Fremont County had one 20-bbl. completion and one dry hole.

New Mexico had a disappointment in the Empire Gas & Fuel Co.'s No. 1-C State in the San Simion district in Lea County, which is being abandoned at 4,194 feet. The Marland Production Co.'s No. 1 Lockhart was given several shots and gauged 11½ bbls. an hour in a 12-hour test. The Texas & Pacific Coal & Oil Co.'s No. 1 State had 2,000,000 feet of gas at 2,810-18 feet. Flynn, Welch & Yates' No. 1 Jackson, northeast of the Artesia Pool in Eddy County, gauged 270 bbls. in 24 hours.

Several Utah wells are attracting attention as they near the completion stage, the most important being the Continental Oil Co.'s Boundary Butte test, and the Phillips Petroleum Co.'s Wayne County test, the latter looking more encouraging with slight odor of oil and gas in the hole.

Wyoming reported drilling delayed by storms. The Cody Petroleum Co.'s No. 6 Klindt, in the Oregon Basin Field, which started off at the rate of 500 bbls. a day, ran into water when drilled a little deeper, and another well encountering water on the east flank of the saddle between the two domes narrows down the productive area somewhat. No test has yet been made on the Carter Oil Co.'s oil discovery on the Billy Creek Dome, but it looks like a 1,000-bbl. well.

COLORADO

The Vineland area southeast of Pueblo is developing rapidly into one of the most active drilling campaigns undertaken in Colorado in many years in spite of the fact that only one well has been drilled to the sand and that it has remained untested for two months. Six wells are drilling, eight firms are moving in, building rigs, or rigging up, and locations for nine other wells have been made. Fair weather on March 10 resulted in thousands of people visiting the field. Denver men who went down to witness the spudding in of the wells estimated that there were 5,000 people at the discovery well during the day, but this is conservative on the basis of a check of automobiles made by a party in the field. This check showed that 2,780 cars entered the area around the discovery well during the day. The discovery well, the Vineland Oil Co.'s No. 1 Shaw, SE NW NW, Section 3-22-63, was bailed Sunday for the benefit of visitors, about 10 bbls. being taken out. Bailing, according to all accounts, does not lower the oil which now stands at 1,040 feet. The hole is cased to 490 feet, the remainder being open. The total depth is 1,190 feet. There is a little water reported coming in from just below the casing at about 510 feet, and again at around 900 feet. While it is not in any large quantity, the operators feet that the water should be shut off to protect the oil sand below. The company has had casing on the ground for some time, but does not appear to be making any great effort to go ahead.

The activity in the district has taken on the aspects of a fairly good-sized boom. A townsite near the discovery well is being laid out by Pueblo parties, a small hotel has been opened, motion pictures were taken Sunday by one of the big film companies, and speculation in leases continues on a considerable scale. While several of the major operators are keeping a close watch on the district, most of them are awaiting further developments since their geological departments do not report any structural conditions visible at the surface to account for a large pool. The visitors included many from Texas, Oklahoma, Kansas and as far away as California.

Active Developments

The Sundance Oil Co., in which O. H. Shoup, former governor of Colorado and former president of the Midwest Oil Co. is interested, has made a location on the SE cor. SE, Section 35-21-63, three-fourths of a mile east and one-fourth of a mile north of the discovery, and has made a contract with Windle Brothers to move in at once. A 46-foot derrick will be erected. This same firm will drill in the NW NE, Section 16-22-63, but has not yet spotted the location. C. W. Sheffer is moving in for a well on the SE Section 7-22-63, on a lease held by William Barber, county clerk and recorder of Pueblo County. The Christy-Frantz Oil Corp. is rigging up on No. 1 Wilson, NW cor., Section 16-22-63, and Windle Brothers' No. 1 Bergman, NE cor. NW, Section 5-22-63, is building rig. Windle Brothers' No. 1 Dunn, NW cor., Section 11-22-63, is rigging up, and same firm's No. 1 Alber, NE cor. SW, Section 6-22-63, is almost ready to commence spudding. The Christopher Oil Syndicate's No. 1 Stanbeck, SW cor. NW, Section 19-22-62, is drilling at 420 feet, and G. E. Stevenson's No. 1 Isis, C E half SW NE, Section 1-23-63, on Welton Land & Water Co. land, commenced spudding on March 11. The Christy-Frantz Oil Corp.'s No. 1 Vey, C SW NW, Section 13-22-63, is drilling at 520 feet and its No. 1 Mannerich, SE NW SW, Section 34-21-63, is drilling at 250 feet. The Security Oil Trust's No. 1 Bush, SW NW NW, Section 14-22-63, is drilling at 250 feet, and C. W. Sheffer's No. 1 State-Oliver-Lubers, SW NW SE, Section 4-22-63, has a water sand at 110 feet bailing 70 bbls. an hour. This well solves the water problem for the firm and as this sand appears to lie beneath the entire district, it will assure plenty of water for drilling. The Nordic Oil Syndicate's No. 1 Carr, C SW SW, Section 13-22-63, commenced spudding March 10. This formerly was carried as Peterson & Andrews. The Bred-Shu Oil Co.'s No. 1 Randall, NW cor. SW, Section 1-22-63, is a location. Nine other locations have been made, but materials have not yet been placed on the ground.

The Continental Oil Co.'s No. 2 Elder, NE SW NE, Section 18-9n-68, on the south end of the Wellington structure in Larimer County, was completed this week at 4,504 feet after drilling 12 feet into the Muddy sand topped at 4,492 feet. While it has not yet been officially tested, it is making between 250 and 300 bbls. a day. It is located one-fourth of a mile south and west of No. 1 Elder, the nearest producer, and extends the proven area of the pool that far south. It gives the company several new locations for wells in proven territory. The same company's No. 3 Mitchell, SE NE, Section 6-9-68, is drilling at 2,435 feet. This is the only drilling well on the structure though another is to be started shortly on the northwestern side of the dome. The Five Square Oil & Gas Co.'s No. 1-A State, SW cor., Section 16-4n-69, Berthoud Dome, is drilling out cement. The 8¼-inch was set at 2,902 feet.

Loveland Well

Larimer County had some excitement this week when a well in the heart of the town of Loveland and owned by the municipality was reported flowing oil. The well was drilled in 1885 to supply water. It was reported by men identified with the operation at the time that at 1,460 feet the driller struck some oil and gas. This was cased off and the hole continued to 2,460 feet where it encountered water. It has been flowing water through a fountain ever since, but the water is highly mineralized. The location of the well is at Fourth Street and Cleveland Avenue, Section 15-5n-68. The first flow of oil was reported a few nights ago by Patrolman George Sparger who noticed that the well was flowing with greater force than usual and that the liquid was black. He took a sample in a bottle to police headquarters and later returned with another officer and collected additional samples. Later on the flow had changed and was about half oil and half water. During all its period of activity it has made some gas with the water. Corrosion of the pipe where the oil was shut off 34 years ago probably released the oil. The city of Loveland drilled another well on the same section in 1916 which was abandoned at 1,600 feet. The Loveland Oil & Gas Co. drilled on Section 13-5-69, some distance away, and abandoned at at 2,950 feet. A sand at 2,903-55 feet was shot without results.

This territory is not being overlooked by the operators though it was given considerable attention in 1924 following the discovery of oil on the Wellington Dome. Leases have been taken on a large block southeast of Loveland and between that town and Berthoud in the name of a man identified with the Ohio Oil Co., and it is reported that drilling will not be required until next November, the company having in the meantime an opportunity to do some core drilling to work out the structure.

Fountain Creek

Denver parties have blocked up 10,000 acres just south of Colorado Springs and on the west side of Fountain Creek opposite the town of Fountain and will start a test within the next few days. Colorado Springs parties have leased 14,000 acres in the same area and will also drill at once. The existence of a structure in that area has been known for some time and leases were taken on several occasions but the ground could not be blocked up solidly on account of the diversiey of ownerships. The area is just to the west of an area tested several years ago by the Ohio Oil Co. and the Phillips Petroleum Co. and on a separate

(Continued on Page 67)

TURNER VALLEY FIELD DELIVERIES WERE LARGER DURING FEBRUARY

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Mar. 16.—With total deliveries of 41,349 bbls. in February, the Turner Valley Field exceeded its January output by 4,442 bbls. January deliveries totaled 36,907 bbls. In February a total of 38,193 bbls. was delivered to the Imperial Oil refinery, and 3,156 bbls. to the Regal refinery. The reduction in the receipts from Okalta Oils' No. 1, which was frozen during the month, and Dalhousie Oil Co.'s No. 1, which made no deliveries, was offset by new production. Home Oil Co.'s No. 1, in production for only a small part of the month, delivered 7,152 bbls., making 4,862 bbls. of crude naphtha and 2,290 bbls. of crude oil. Two other new producers contributed to the month's totals. Royalite Oil Co.'s No. 15 delivered 2,850 bbls. of light crude for the portion of the month it flowed. This flow is being well maintained. Royalite's No. 18, the latest well to be brought into production, made 142 bbls. in the last two days of February. It is still cleaning itself, and its regular production is not yet determined. Among the older producers, the McLeod Oil Co. greatly increased its deliveries to the Regal refinery, with 1,914 bbls. in February compared with 416 bbls. in January. Spooner Oils, with 1,052 bbls., added 200 bbls. to its January output; while McDougall-Segur Oil Co. made about the same. Royalite's No. 4 gusher declined from more than 17,000 bbls. to 14,952 bbls., but this decline was due largely to the shorter month.

Detailed figures show the following deliveries for February:

Imperial Oil, Crude Naphtha

Well—	Deliveries	Av.
Royalite's No. 1	141	5
Royalite's No. 4	14,952	534
Royalite's No. 7	2,096	75
Royalite's No. 17	908	32
Royalite's No. 18	*142	71
Home Oil Co.'s No. 1	†4,862	174
Illinois-Alberta	2,347	84
Total	25,448	975

*Two days. †Part month.

Imperial Oil, Light Crude

Royalite's No. 9	805	29
Royalite's No. 10	63	2
Royalite's No. 11	98	3
Royalite's No. 15	*2,850	102
Royalite's No. 18	135	5
Dalhousie's No. 5	1,549	55
Dalhousie's No. 6	536	19
Foothills' No. 1	2,128	77
Home Oil Co.'s No. 1	2,290	82
Home Oil Co.'s No. 2	1,098	39
McLeod Oil Co.	167	6
Okalta Oils' No. 2	886	31
Calmont Oils	137	5
Total	12,742	426

*Part month.

Regal Refinery

McLeod Oil Co.	1,914	68
Spooner Oils	1,052	38
McDougall-Segur	193	7
Total	3,159	113

Production in Ontario

Official figures just issued show that the production of crude petroleum in On-

(Continued on Page 123)

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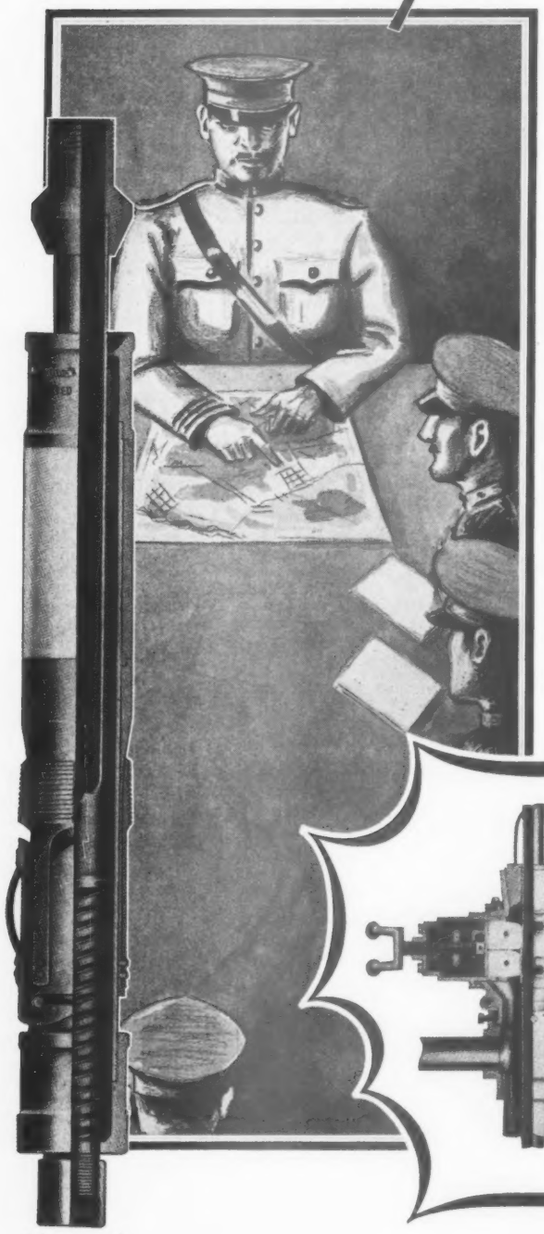

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An extra large passage for oil and gas allows the Guiberson Control Head Packer to run in against the heaviest flows. It is easily set and may be reset higher or lower as desired. Pulls out readily.

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Deeper Drilling Agitates California

Efforts Being Made to Limit Operations in Newly Discovered Horizons. Conservation Legislation Being Advocated

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Mar. 16.—Although State production in California has been declining for the past several weeks and will continue to drop for some time to come due to a normal decline in flush production, this descent will not continue indefinitely as another upswing should get under way in the near future, unless success attends the concerted efforts being made to retard deep-zone exploitation at Santa Fe Springs for a period of six months. The outcome of this move to prevent deep drilling in this field until late summer is problematical, although many are inclined to believe that this development work will be delayed in accordance with generally expressed wishes to reduce or alleviate overproduction. Success may ultimately attend the movement under way to prevent immediate development of the Clarke zone by mutually refraining from deep drilling for a definite period of time but it is doubtful if operators will also agree to retard development of the overlying recently discovered O'Connell zone and restrict their drilling operations to the already partially depleted Buckbee and intermediate Nordstrum horizons.

The O'Connell zone, which is probably the first of several productive horizons in the Miocene which incidentally can be anticipated down to perhaps 8,000 feet, is encountered at approximately 6,350 feet on top of the structure. George F. Getty's No. 19 O'Connell, which indicated the potentiality of this zone, was brought in from 6,610 feet with a 4¾-inch combination string cemented through perforations at 6,360 feet. The so-called Clarke zone has not yet been definitely proven productive but this is more or less of a formality in as much as more than 100 feet of oil sand has been cored in several edge wells a little below the 7,000-foot level.

Advocating Legislation

Practically all progressive California operators are advocating constructive legislation in order to prevent a selfish minority from thwarting efforts at stabilization. Numerous suggestions have been advanced as to the best method of effecting an equilibrium between supply and demand and, while all proposals have more or less merit, I am still of the opinion that the California situation can best be stabilized through the regulation of natural gas production instead of restricting crude oil production irrespective of the amount of gas produced. As a matter of fact, if all excess production of natural gas were to be entirely eliminated there would probably not be any overproduction situation as the pinching in of gas production would be sympathetically reflected in a smaller output of crude oil. Recent developments indicate that considerable stress has been placed on the advisability of adopting corrective measures predicated on a gas-oil ratio. The State administration is in sympathy with any attempt to eliminate excess production of natural gas and will undoubtedly support any movement along this line. It is quite likely, therefore, that some definite movement will be undertaken along this line in the near future. Gas conservation is especially timely in view of anticipated additional deep-zone exploitation at Santa Fe Springs, which will undoubtedly result in an overproduction of natural gas. If operators are obliged to limit their production of natural gas to market requirements crude oil production will be arbitrarily reduced and kept within bounds and a repetition of previous chaotic conditions prevented. The California State Mining Bureau does not have sufficient authority at the present time to prevent the waste of natural gas but remedial legislation has already been introduced and this organization will be entirely revamped and given a free hand in enforcing the police powers of the State.

Those sponsoring statewide restriction of production do not favor the policy of placing undue restrictions on natural gas production on the assumption that gas is incidental to the production of crude oil and of secondary importance. Natural gas under this plan is to be treated as a component part of the oil and no further or other restriction should be had than the restrictions imposed on oil. It is agreed that the flow of gas should be regulated to produce the maximum amount of oil it is capable of lifting during the estimated life of a well. This is the so-called oil-gas ratio for producing the maximum amount per acre per well. The principal objection to the plan which subordinates natural gas production to the production of crude oil lies in the fact that some definite basis must be established upon which to indicate the amount of crude oil production which should be curtailed or pinched in. This is done by establishing a theoretical legal formula which specifies that if at any time or times the production of oil in the State is greater than the requirements of the State and if the marketing of the surplus adversely affects the value of the oil needed or used for domestic (within the State) consumption, such facts will be deemed conclusive evidence of overproduction; or if such surplus production be stored instead of marketed and the resultant storage be in excess of 150 days' requirements, such facts shall also be deemed conclusive evidence of overproduction. This formula represents a sound working plan but appears too intricate for general application as it would tend to discourage progressive operation on the part of some operators and limit wildcat exploration.

Association Active

The California Independent Oil Producers, Inc., under the direction of Charles A. Son and others, are, in conjunction with a number of independent producers, sponsoring statewide proration of crude oil in lieu of establishing natural gas production as the fundamental basis for any projected curtailment. They have established the limit to which legislation should go at this time toward restricting the production of oil and gas and are of the opinion that it might be advisable to later sponsor supplemental legislation covering the marketing of natural gas during periods of overproduction of gas, such legislation to be along the lines of requiring an exchange of facilities among the various marketers of gas. This legislation can best be worked out by the gas companies themselves and should be entirely distinct from legislation regulating production, in as much as these companies are public utilities and under the jurisdiction of the Railroad Commission. The report of the California Regional Committee of the American Petroleum Institute which was presented and discussed at Houston, Tex., March 15, represents a composite picture and is the result of intensive detailed study.

Another Elwood Producer

Santa Barbara County occupied the spotlight again this week due to the completion of another prolific producing well in the Elwood Field and the rather disastrous blowout of the Continental's No. 1 Franklin, a very promising wildcat located a few miles east of the shallow Summerland Field where small production has been secured out in the open ocean for a number of years. The Barnsdall's latest completion in the Elwood Field was No. 6 Bell Luton, which came in under a natural flow doing 5,650 bbls. of clean 39.7 gravity oil and 2,200,000 feet of saturated gas daily from 3,481 feet. This new well is the most westerly producer finished in this field up to the present time and it likewise has the

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S-T-R	Depth	Status
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	4,974	gr. sd. drilling
California Western Oil Co., No. 1 Elkins, Ventura Co.	28- 4-19	2,951	suspended
Exline, Emma, No. 1 Saticoy, Ventura Co.	33- 3-21	2,412	suspended
American Oil Co., No. 1 Camarillo, Ventura Co.	33- 2-20	870	hd. sd. drilling
Star Pet. Co., No. 2 Canet, Ventura Co.	13- 3-23	6,775	suspended
Bolsa Chica, No. 1 Temescal, Ventura Co.	4- 4-18	725	br. sh. drilling
The Texas Company, No. 1 Hueneme, Ventura Co.	Lot 82	425	sd. drilling
The Texas Company, No. 1 Wiley Canyon, Ventura Co.	2- 3-19	Rig	rigging up
Miley, E. J., No. 2 Casitas, Ventura Co.	12- 3-21	940	rd. sd. drilling
Shell, No. 1 Marr, Simi, Ventura Co.	31- 3-17	2,265	hd. sd. drilling
Continental, No. 1 Sulphur Mountain, Ventura Co.	21- 4-22	3,754	reaming
Continental, No. 2 Sulphur Mountain, Ventura Co.	22- 4-22	5,895	br. sh. drilling
Milham Explt'n., No. 1-A Buttonwillow, Kern Co.	8-28-23	4,662	gas well
Milham Explt'n., No. 2 Buttonwillow, Kern Co.	8-28-23	2,730	gas well
Milham Explt'n., No. 3 Buttonwillow, Kern Co.	8-28-23	2,694	gas well
Milham Explt'n., No. 4 Buttonwillow, Kern Co.	6-28-23	2,670	gas well
Milham Explt'n., No. 5 Buttonwillow, Kern Co.	5-28-23	2,500	gas well
Milham Explt'n., No. 6 Buttonwillow, Kern Co.	8-28-23	2,676	gas well
Milham Explt'n., No. 7 Buttonwillow, Kern Co.	6-28-23	2,720	suspended
Milham Explt'n., No. 8-A Buttonwillow, Kern Co.	8-28-23	2,673	gas well
Doheny-Stone, No. 1 Salisbury, Kern Co.	7-29-24	4,750	cemented
Southern Calif. Gas Co., No. 1 Buttonwillow, Kern Co.	4-28-23	4,272	suspended
Southern Calif. Gas Co., No. 2 Buttonwillow, Kern Co.	27-28-23	Rig	suspended
Lincoln Drlg. Co., No. 1 Buttonwillow, Kern Co.	6-28-23	190	suspended
Richfield Oil Co., No. 1 Semitropic, Kern Co.	21-26-22	5,207	cleaning out
Richfield Oil Co., No. 2 Semitropic, Kern Co.	36-27-23	3,812	lot of gas
Pacific Eastern, No. 1 Union Ave., Kern Co.	6-30-28	5,640	suspended
Pacific Eastern, No. 2 Union Ave., Kern Co.	6-30-28	4,500	suspended
Pacific Eastern, No. 3 Union Ave., Kern Co.	6-30-28	4,443	gas, shut in
Pacific Eastern, No. 5 Union Ave., Kern Co.	5-30-28	4,991	suspended
Stabler, W. W., No. 1 Comanche Point, Kern Co.	23-32-29	3,409	suspended
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	1,230	change equip.
Midway Northern, No. 1 Edison, Kern Co.	29-29-30	3,841	suspended
Elmer Oil Co., No. 1 Shafter, Kern Co.	8-28-25	6,100	suspended
Elmer Oil Co., No. 1 Edna, Kern Co.	15-30-30	Rig	rigging up
Elmer Oil Co., No. 1 Rosedale, Kern Co.	33-29-26	Mtl.	building rig
General Pet., No. 1 McFarland, Kern Co.	25-26-25	.....	location
Union, No. 2 San Emidio, Kern Co.	5-10-21	1,591	sd. sh. drilling
Currency Pet. Co., No. 1 Vineyard, Fresno Co.	28-21-14	1,350	gr. sh. drilling
Hornaday & Huggins, No. 1 Kerman, Fresno Co.	32-14-18	1,275	sd. sh. drilling
K. C. L. Oil Co., No. 1 Joaquin Ridge, Fresno Co.	7-19-15	114	sd. drilling
Thomas Pet. Co., No. 1 Krayenhagen, Fresno Co.	33-22-17	550	br. sh. drilling
Union, No. 1 Huasna, San Luis Obispo Co.	34-32-15	3,232	redrilling
Union, No. 1 North Huasna, San Luis Obispo Co.	12-32-14	2,968	cleaning out
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	3,600	pipe bad
Dollar Oil Co., No. 1 Vishnu, San Luis Obispo Co.	18-32-22	1,788	cleaning out
Calhoma Oil Co., No. 1 Livermore, Alameda Co.	9- 3- 3	1,544	cleaning out
Foster & Hammill, Well No. 1, Alameda Co.	21- 3- 3	465	suspended
R. Y. Hanlyn, Well No. 1, Alameda Co.	3- 5- 2	360	suspended
Shell, No. 1 Guadalupe, Santa Barbara Co.	36-10-35	2,515	hd. sd. drilling
Shell, No. 2 Goleta, Santa Barbara Co.	36- 5-31	2,395	rd. sd. drilling
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	1,114	sd. sh. drilling
Standard, No. 1 Tortuga Canyon, Santa Barbara Co.	.....	1,600	sd. sh. drilling
Standard, No. 1 Point Arguello, Santa Barbara Co.	X- 7-35	....	location
Olympic Oil & Refg. Co., No. 1 Mesa, Santa Barbara Co.	X- 7-28	755	sd. sh. drilling
Bankline Oil Co., No. 1 Mesa, Santa Barbara Co.	X- 4-27	3,248	gr. sd. drilling
Exeter Oil Co., No. 1 Elwood, Santa Barbara Co.	8- 4-29	235	hd. sd. drilling
Exeter Oil Co., No. 1 Mesa, Santa Barbara Co.	X- 4-27	1,202	sd. sh. drilling
Amer. Oil Prod. Co., No. 1 Summerland, Santa Barbara Co.	X- 4-26	Rig	rigging up
Sextette Oil Co., No. 1 Goleta, Santa Barbara Co.	10- 4-28	135	sd. drilling
Padre Oil Co., No. 1 Dos Pueblos, Santa Barbara Co.	18- 4-27	122	sd. drilling
System Oil Co., No. 1 Orcutt, Santa Barbara Co.	36-10-34	228	sd. drilling
Pet. Securities, No. 1 Santa Ynez, Santa Barbara Co.	.....	...	location
Tepusquet Oil Co., Well No. 1, Santa Barbara Co.	3- 9-32	2,710	suspended
Becker, Geo. F., No. 1 Summerland, Santa Barbara Co.	33- 4-25	3,090	suspended
Channel Oil Co., Well No. 1, Santa Barbara Co.	29- 4-27	6,304	suspended
Channel Oil Co., No. 1 Fellowship, Santa Barbara Co.	29- 4-27	Rig	rigging up
Continental, No. 1 Carpenteria, Santa Barbara Co.	33- 4-25	3,990	will test
Elwood Consd., No. 1 Goleta, Santa Barbara Co.	8- 4-29	3,310	drill out cem't
Colusa Oil Co., Well No. 1, Colusa Co.	31-15- 4	380	redrilling
Nuna Oil Co., Well No. 1, Colusa Co.	19-15- 5	400	suspended
North Counties Oil Co., Well No. 2, Humboldt Co.	36- 2- 1	2,205	suspended
Humboldt Oil Co., Well No. 1, Humboldt Co.	6- 2- 1	3,041	redrilling
Applegate & Renshaw, Well No. 1, Merced Co.	24- 6-10	2,806	bl. sh. drilling
Angiola Oil Co., No. 1 Angiola, Tulare Co.	27-22-23	5,254	hd. sd. drilling
Shell, No. 1 Dudley, Monterey Co.	15-22- 9	1,011	hd. sd. drilling
Brown Oil Co., No. 1 Parkfield, Monterey Co.	.....	....	grading
Dudley Ridge Synd., No. 1 Tulare, Kings Co.	12-23-19	1,150	sd. sh. drilling

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Pray, Max, No. 1 Inglewood, Los Angeles Co.	34- 2-14	Mtl.	building rig
Ring Pet. Co., No. 1 Inglewood, Los Angeles Co.	28- 2-14	4,704	suspended
Ohio Oil Co., No. 1 Playa Del Rey, Los Angeles Co.	22- 2-15	Mtl.	building rig
Petroleum Securities, No. 1 Hermosa, Los Angeles Co.	32- 3-14	3,940	oil sand
West. Drlg. & Prod. Co., No. 1 Manhattan, Los Angeles Co.	30- 3-14	3,640	sd. sh. drilling
Mont. Park Oil Co., No. 1 Browning, Monterey Park	26- 1-12	4,420	abandoned
Mont. Park Pet. Co., No. 1 Jepson, Monterey Park	25- 1-12	3,937	suspended
Rio Grande, No. 1 Downey, Los Angeles Co.	34- 2-12	4,585	hd. sd. drilling
Jackson, R. W., No. 1 Whittier, Los Angeles Co.	19- 2-11	320	hd. sd. drilling
Burlingham Pet. Co., No. 1 Compton, Los Angeles Co.	17- 3-13	494	suspended
Richfield, No. 1 Maywood, Los Angeles Co.	13- 2-13	5,245	sd. sh. drilling
Easton & Smith, No. 1 Calabasas, Los Angeles Co.	19- 1-17	2,982	suspended
Russell Oil Co., No. 2 Joughin, Los Angeles Co.	25- 3-17	1,550	hd. sd. drilling
Pomona Oil Co., Well No. 1, Los Angeles Co.	32- 1- 8	1,090	fishing
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Richfield Oil Co., No. 1 Puente, Los Angeles Co.	9- 2-10	3,675	gr. sd. drilling
Union Oil Co., No. 1 Richfield, Los Angeles Co.	13- 3- 9	.....	grading
Southwestern Dev. Co., No. 1 Richfield, Los Angeles Co.	21- 3- 9	1,462	sd. sh. drilling
Calif. Eastern, No. 1 Wickham, Los Angeles Co.	32- 5-17	3,098	plug. back
Coastline Oil Co., No. 1 Devil Canyon, Los Angeles Co.	21- 5-17	121	suspended
The Texas Company, No. 1 Anaheim, Orange Co.	35- 4-10	4,306	hd. sd. drilling
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	3,799	br. sh. drilling
West. Drlg. & Prod. Co., No. 1 Newport, Orange Co.	18- 6-10	4,461	suspended
West. Drlg. & Prod. Co., No. 2 Newport, Orange Co.	18- 6-10	Rig	rigging up
Hall Pet. Co., No. 1 Murrietta, Riverside Co.	23- 7- 3	975	suspended
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,232	set pipe
Davenport O. & G. Co., No. 1 San Marcos, San Diego Co.	30-12- 5	547	suspended
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	1,730	sd. sh. drilling

distinction of having the largest penetration of oil-bearing formation, a total of 251 feet being taken. The Barnsdall, which is developing the Elwood Field in conjunction with the Rio Grande Oil Co., has adopted the policy of taking a little more penetration in the oil sand with each succeeding well. Eight producing wells have been finished by the Barnsdall in this field since its discovery late last year and all of them have shown sustained substantial production since completion, the decline being almost negligible up to the present time. Current production approximates 30,500 bbls., a daily average of 3,808 bbls. per well.

These relatively shallow producers rarely require more than a month from spud to completion and consequently represent a minimum drilling expense averaging $30,000 each. The oil is of a highly desirable quality from a refining standpoint and consequently commands a top figure of $1.70 per barrel. It is quite obvious that these wells pay out in less than a week and at the present rate of production represent an aggregate monthly income of $1,555,500, one-half of which accrues to the Barnsdall and the remainder to the Rio Grande Oil Co. These two concerns, both appreciating the necessity of conservation, have formulated a new development policy which contemplates the alternate drilling of one new well on each lease instead of drilling two or more projects simultaneously, as has been done in the past because of stringent lease requirements. As a result of this new program no further drilling will be undertaken on the Bell Luton lease until No. 4 Doty in the eastern part of the field has been finished. This well, incidentally, was spudded in soon after the completion of No. 6 Bell Luton, the Barnsdall's latest acquisition.

Continental's Wildcat

The Continental Oil Co.'s Carpenteria wildcat, which blew out last week and unfortunately killed two employes when an elbow on the lead line broke, is still causing Continental officials considerable anxiety because of the tremendous gas pressure. The well has been opened up several times during the past few weeks but these preliminary tests were all unsatisfactory because of excess pressure and required the use of hematite to kill the excessive gas flow. This wildcat has therefore not had an ample opportunity to reveal its potentiality as far as crude oil production is concerned because the tremendous gas pressure which builds up after restrictions are removed presents a serious hazard and forces the field men to kill the flow of gas by pumping in heavy mud. It is generally admitted, however, that the Continental's wildcat has all the earmarks of production, notwithstanding the dubious attitude of some. The area being prospected by the Continental is ideally situated as its proximity to the Pacific Ocean eliminates any pipe line transportation and opens up several avenues for the sale of crude oil. It is quite similar to the Elwood Terrace Field of Santa Barbara County in this respect, the discovery well in each instance being located within a stone's throw of high tide. The economic importance of Carpenteria is therefore quite obvious and this district will prove an important factor in future production if the Continental succeeds in developing a substantial production of sweet crude oil, which appears quite probable.

Lawndale Field

There was no material change in the status of the Lawndale Field of Los Angeles Basin during the past week and this area is still an enigma. A number of operators are marking time awaiting the outcome of the test to be made on the Standard's No. 1 Vance, located in the town lot area approximately 1,000 feet east of the discovery well. No. 1 Vance of the Standard, which is bottomed at 6,224 feet with a string of 9-inch landed at 6,140 feet, will test out a rather promising looking sand which was picked up approximately 400 feet deeper than the top of the sand encountered in the Smith Petroleum Co.'s discovery, No. 1 Peck. There are quite a number of wells below the depth at which production was secured in the discovery well and while this fact has caused considerable anxiety among producers the oil sand cored by the Standard has relieved the tenseness of the situation. Over $5,000,000 has already been expended in the acquisition of leases and production of development work up to the present time. It is no wonder, therefore, that those interested in this area are somewhat concerned over the failure of many wells to pick up the Peck sand, notwithstanding that some are more than 400 feet deeper than the discovery well. It is too early to state definitely whether operators drilling in the town lot area will ultimately succeed in developing commercial production, although it is generally admitted that this field has reached the critical stage with something expected to develop one way or the other. Regardless of the outcome of present work, it is a foregone conclusion that many wells in the town lot area will never pay out, authough there is reason to believe that still deeper production can be anticipated.

One of the most interesting developments in this area during the past week was the coring of a rather promising looking oil sand in No. 1 Schwuchow of the Petroleum Securities at Hermosa Beach just below 3,825 feet. The importance of this field lies in the fact that it will result in the discovery of another new oil field if clean production is secured, in as much as the well in question is located over 2 miles south of the discovery well at Lawndale where intensive development has been under way for several weeks past. The area in which this new well is located, incidentally, has been intensely subdivided and we may anticipate another town lot drilling campaign if commercial production is secured. The most interesting feature in connection with this discovery is the shallow depth at which the oil sand was logged. The log of this well shows a series of tar showings from almost the grass roots down to the present depth, 3,940 feet. A string of 10¾-inch has just been run in preliminary to an early test and it is needless to say that the outcome of this work will be watched with considerable interest as conditions look quite promising.

Santa Fe Springs

The past week was a rather lean one at Santa Fe Springs Field as far as completions were concerned although there were one or two substantial producers finished during this period. The Star Petroleum's No. 3, for instance, came in under a natural flow doing 4,315 bbls. daily from the Buckbee zone at 5,903 feet but No. 4 Weaver of The Texas Company was only good for 925 bbls. daily upon completion at 5,872 feet. Nos. 206 and 207 on the Santa Fe lease of the General Petroleum came while a water test was being made and both of them are being listed as satisfactory completions. The former tanked 2,795 bbls. during the first 24-hour test from 5,825 feet while the latter made 1,650 bbls. initially from 5,854 feet. Both were finished in the Buckbee zone and are in good shape to go deeper when Miocene development gets under way. George F. Getty put his No. 10 on a production test at 5,925 feet during the early part of the week but it tested wet and has accordingly been recemented. One of the last wells finished in this field during the past seven-day period was No. 3 Wickman of The Texas Company which came in flowing 1,598 bbls. of clean pipe line oil daily from 5,893 feet.

Long Beach

Although the Long Beach Field has ceased to be the dominating factor in State production and is due to reach a substantially lower production as time goes on, the output of this district is really holding up in a remarkable manner. The stability of production in this area is due to the enormous thickness of oil-bearing formation and the consistent completion of new wells and, while production will continue to show a normal decline, there are still 144 incompleted drilling projects under way, many of which should be ultimately completed. The Shell Oil Co., discoverer of the Long Beach Field, is the largest individual operator from both a production and development standpoint. This company heads the list with 18 strings of tools in operation and a current daily production of 45,000 bbls. from 198 producing wells. The Richfield Oil Co. follows the Shell with a current daily output of 30,000 bbls. from 106 producing wells. The Texas Company is running 14,500 bbls. of pipe line oil daily, Dabney & Johnson 9,000 bbls., General Petroleum 4,500 bbls. and Union 3,000 bbls. daily.

Water trouble is becoming an important factor at Long Beach and completions for the past several months have reflected this unfavorable condition. Some of this is due to mechanical trouble or an unfavorable location structurally, but a check indicates that edgewater encroachment in this district is becoming a matter of no small importance. Practically all wells which have been completed around the edge of the Long Beach structure during the past several months have shown excessive water cuts. Underground surveys have revealed an almost general tendency for drilling wells around the edge to slide off down the structure with consequent less favorable results than would have been secured if the deviation had been toward the axis. Attempts have been made to correct this condition by using a whipstock but the results obtained have not been uniformly successful by any means. Recent completions at Long Beach have shown a considerable variation in initial production, ranging all the way from 65 bbls. to 3,400 bbls.

The largest well finished during the past week or 10 days was the D'Angelo Oil Co.'s No. 4 Long Beach, which came in under a natural flow doing 3,400 bbls. of clean 30.3 gravity oil daily from 7,069

(Continued on Page 129)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	21,375	13,054	.....	.....	480,941	449,739
Crude oil	61,825	8,832	.....	.....	172,375	1,436,819
Gasoline	700,016	100,002	313,867	44,838	4,381,970	2,041,328
Naphtha distillate	.....	.....	81,750	11,679	81,750	.....
Coastwise—						
Crude oil	762,029	108,761	383,678	54,811	6,069,351	3,616,448
Fuel oil	365,334	52,191	678,226	96,889	4,544,390	3,979,399
Diesel and gas oil	7,525	1,075	66,486	9,498	199,403	306,095
Gasoline	174,752	24,965	132,312	18,902	2,357,558	2,646,491
Kerosene	.....	.....	975	139	3,313	22,865
Naphtha distillate	.....	.....	.....	.....	.....	124,992
Exports—						
Crude oil	3,700	529	245,027	35,004	932,613	524,183
Fuel oil	135,078	19,298	421,541	60,220	3,654,781	5,715,366
Diesel and gas oil	.....	.....	115,586	16,512	512,999	577,384
Gasoline	202,157	28,880	68,765	9,823	1,916,501	1,058,733
Kerosene	47,660	6,309	71,575	10,225	597,211	889,453

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	342,425
Gasoline	.....	.....	75,514	10,788	576,684	330,343
Lubricants	.....	.....	.....	.....	.....	138,766
Coastwise—						
Fuel oil	.....	.....	.....	.....	624,580	815,522
Diesel and gas oil	74,977	10,711	79,758	11,394	182,724	78,495
Gasoline	81,417	11,631	46,484	6,641	733,993	749,735
Kerosene	5,141	734	7,791	1,113	24,670	68,321
Exports—						
Crude oil	.....	.....	.....	.....	71,453	45,102
Fuel oil	.....	.....	.....	.....	96,351	457,946
Diesel and gas oil	.....	.....	.....	.....	62,815	10,400
Gasoline	44,540	6,363	187,657	26,808	969,303	1,140,665
Kerosene	.....	.....	.....	.....	69,458	141,429
Lubricants	.....	.....	.....	.....	13,693	.....

SIX NEW WELLS AT MUSKEGON ADD NEARLY 10,000 BBLS. INITIAL

By Special Correspondent

MUSKEGON, Mich., Mar. 16.—The largest initial producer and the largest number of wells with an initial flow of 1,000 bbls. a day or more were brought in during the past week in the Muskegon Field.

Thompson Brothers' No. 1 Trenz, NE SE, Section 12-10-17, Laketon Township, set a new high record flowing 1,500 bbls. in six hours, or at the rate of 6,000 bbls. a day pinched in. It came in at 1,639 to 1,640 feet in the upper Traverse with a flow of gas and oil strong enough to lift the string of 6⅝-inch tools and about 200 feet of wire line out of the hole and dump it in a tangled mass within the derrick. This is the first well in the Muskegon Field which had such a gas and oil pressure. The gas flow was estimated to be about 10,000,000 feet.

Six other new completions in the Dundee, five of which will make from 1,000 to 3,000 bbls. a day initial production each, will aggregate nearly 10,000 bbls. more a day to start. Since none had set enough field tanks to take a 24-hour test it has been impossible to get an accurate gauge.

The largest of the new Dundee producers was the Beaver Oil Co.'s No. 1 A. Peters, NE SE, Section 12-10-17, Laketon Township. It came in at 2,018 21 feet and flowed 1,000 bbls. in less than eight hours pinched in. It is estimated it would make at least 3,000 bbls. in the first 24 hours if allowed to flow open.

Two wells in the heavily productive area and about a quarter mile north of the wells mentioned will make about 2,000 bbls. each as initial producers. C. W. Marsh and others' No. 1 Hallock, SW SW, Section 7-10-16, Muskegon Township, filled two 500-bbl. tanks in 15 hours starting out at 60 bbls. an hour and increasing to more than 100 bbls. an hour. It was pinched in during the flow of 1,000 bbls. which filled all available field tankage. Oil was struck at 2,021-24 feet in the Dundee.

The Duchesse Oil Co.'s No. 1 Martin Kieft, in the same quarter section and a north offset to the Hallock well, filled two 250-bbl. tanks in six hours and had to be shut down to repair a leaking control head. It had a flow of about 5,000,000 feet of gas before it blew itself into the oil. Pay sands were encountered at 2,025 feet and additional field tanks have been set.

Two other wells within a quarter of a mile west of the Thompson-Trenz and Beaver-Peters wells will make about 1,000 and 1,200 bbls. a day, respectively, from the Dundee sands.

The Double Shot Oil Co.'s No. 1 Henry Dykstra, NW SE, Section 12-10-17, Laketon Township, came in at 2,033-35 feet to flow 60 bbls. an hour. It flowed at the rate of 850 bbls. a day under 250 pounds back pressure in a later test but could not be kept open for lack of storage space.

Other Producers

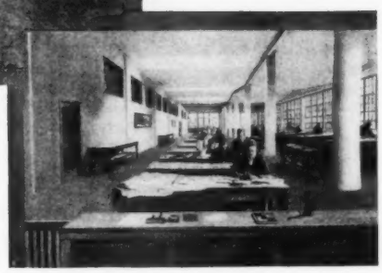
The East Ohio Gas & Oil Co.'s No. 1 Malone, NW SE, Section 12-10-17, topped the oil pay sands of the Dundee at 2,051 feet and is reported to be a 1,000-bbl. initial producer. It may be drilled deeper.

The Wright Oil Co.'s No. 3 Giles, SE SW, Section 6-10-16, topped the Dundee oil sands at 2,048 feet and made 20 bbls. an hour during the flush production. It is estimated at 300 bbls. a day.

Dundee wells of the Wright Oil Co., of which Kelley Goldboss is president,

(Continued on Page 68)

Aeroplane view of the Waukesha Motor Company's plant at Waukesha, Wis. The two buildings in the foreground and the building paralleling the tracks are the important additions just completed.



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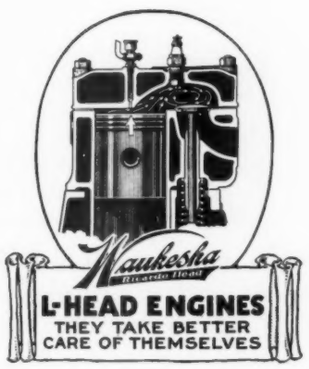

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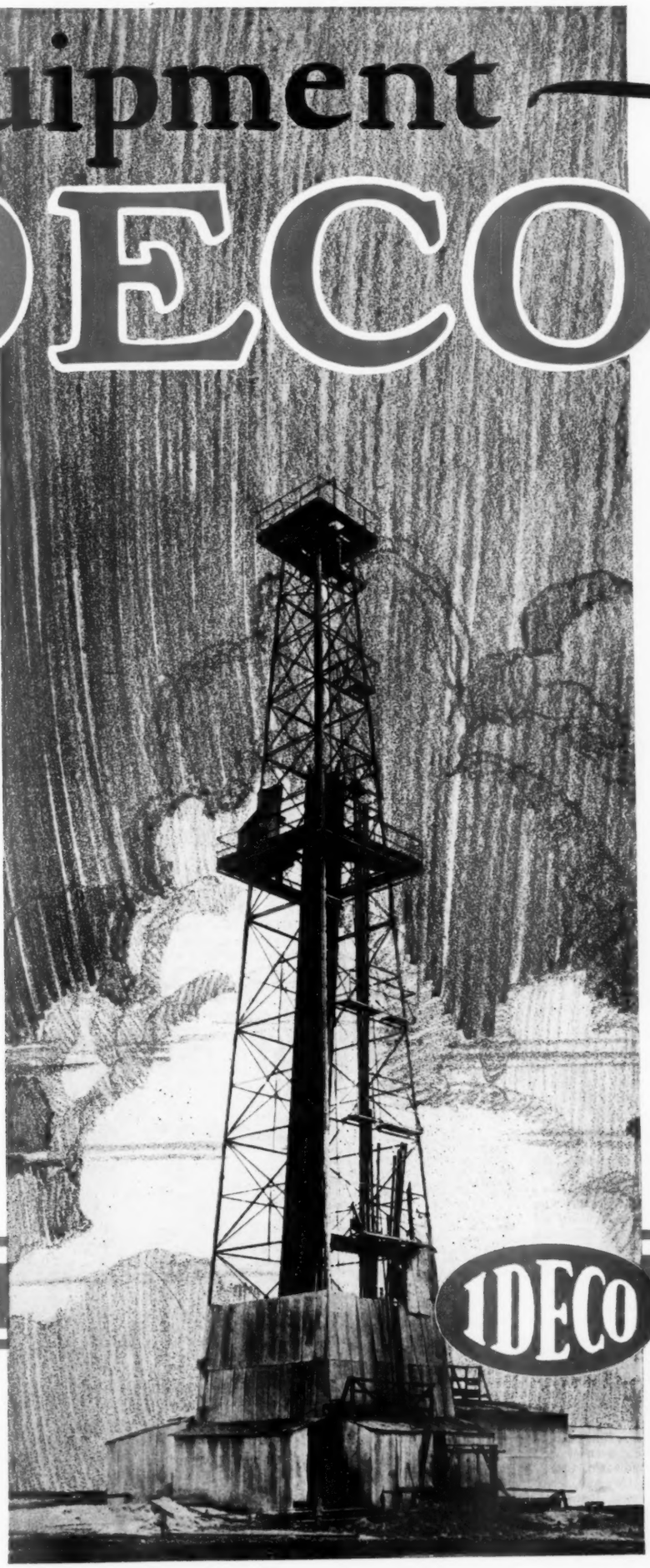

514-D

Spencer County, Indiana, Gets Play

Weather Delays Operations in Old Lima and Central Ohio Fields. Newer Areas in Illinois Most Active

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Mar. 16.—The only division in the Central West Field that failed to report a completion was the old Lima Field of northwestern Ohio, where conditions were not favorable for work on account of high waters and inability to make headway on wells that have got close to the Trenton formation.

In the old Wood County area of the Lima Field, W. E. Donnelly is drilling on the Charles South farm, Section 4, Liberty Township, and Mattie D. Rouse and others have a rig up for No. 23 on the Eli Stockwell, Section 2, same township. George L. Haubert and others have a rig up for No. 5 on the Catherine Smith, Section 29, Perrysburg Township, same county, and George Huffman and others have a rig up for No. 4 Mary Reitzel, Section 23, same township. In Lake Township, Lantz, Schulte and others are drilling on the Simon Acherbarger, Section 32, Lake Township, same county, and in Troy Township, Charles F. Zeising and others are drilling on the C. F. Miller, Section 4, and R. M. Bell and others drilling on the E. Hurrellbrink, Section 12, same township.

The only drilling well in Hancock County is in Big Lick Township where R. W. Kirk and others are working on the Harriett Hays, Section 34.

Neely and Nolan are getting ready to start No. 4 on the Philo Bassett, Section 13, Bath Township, Allen County. C. A. Peavey and others have No. 3 C. G. Vore, Section 12, under way. In Richland Township, William G. Leiber is starting No. 4 Mary Kern, Section 13.

In Waterville Township, Lucas County, the Waterville Gas & Oil Co. is drilling a test for gas on the Eliza Hutchinson, Section 21. In Pleasants Township, Seneca County, in the Tiffin Field, Hulse and Kundtz of Cleveland are at work on a test on the A. Haught, Section 30. In the northeastern part of Auglaize County, Abbott Brothers are shut down on the Harrison Goodard, Section 1, Wayne Township.

Central Ohio Field

During the week but 13 completions were reported from Central Ohio, of which 2 were oil wells with an initial production of 60 bbls., 7 dry holes and but 3 gas wells.

In Ashland County, Green Township, the Ohio Fuel Gas Co.'s No. 1-3,308 on the Ida M. Toms, Section 32, was a dry hole. The Logan Gas Co.'s No. 1-3,069 on the Ada E. Emerick, Section 23, Vermillion Township, was also a duster. The Ohio Fuel Gas Co. made a location on the Mary J. Armstrong, Section 22, same township. The Kemrow Co. has started the drill on the John J. Shinabarger, Section 35, Orange Township, and drilled in a dry hole on the Maurice Topping, Section 12, Montgomery Township, there being no sand found. In Perry Township, Jones and others found a duster in a second test on the Charles Noel, Section 15, in the shallow Berea grit formation. In Mohican Township, Jones and others are drilling No. 4 J. J. Wingbigler, Section 4, and W. J. Smith is drilling No. 3 Guy Humm, Section 29. The Logan Gas Co. made a location for No. 1-3,085 on the Hattie B. Metcalf, Section 82, same township. The Kemrow Co. found no sand on the J. and M. Hileman, Section 10, Miflin Township, and it goes as a duster. Curtis and others have shut down their test on the Melvin Devault, Section 29, Perry Township, but will resume drilling as soon as the weather will permit.

No completions were made in Lorain County. The only change from the previous report is a location staked by the Ohio Fuel Gas Co. for No. 1-3,485 on the M. W. Rowland, Lot 23, Carlyle Township.

Wayne County

In Wayne County, Chester Township, the Ohio Fuel Gas Co.'s No. 1-3,407 on the Alice C. Bowman, Section 12, is slightly above the average gas wells of the field. The Logan Gas Co. found a light gas well at No. 1-3,075 on the Gerber-Berg farm, Section 14, Sugar Creek Township, in the Berea sand, but is now drilling to the Clinton lime formation. In Congress Township, the Ohio Fuel Gas Co. made a location for No. 1-3,479 on the Sarah E. Lomery, Section 13, and Barnhart and others made a location on the Jennie Keim farm, Section 5.

In Knox County, Brown Township, the Upham Gas Co. has a very nice gas producer in No. 5 on the R. J. Kunkle farm, Section 7. Ohio Fuel Gas Co. is drilling No. 1-3,469 on the J. A. Reed farm, Section 11, also No. 4-3,465 on another of the J. A. Reed farms, in Section 10. This company also made a location for No. 4 on the A. J. DeLong, Section 7, and for No. 4 on the Millie E. Long, Section 2, same township. Same company made a location for No. 1-3,472 on the A. W. Minard, Section 1, Pike Township.

In Coshocton County, Perry Township, the Preston Oil Co.'s No. 2 on the R. E. Van Winkle, Section 14, showed a production of 55 bbls. initial in a sand from 3,186-3,233 feet, and made a location for No. 2-1,298 on the J. J. Wilson, same section.

Summitt County reported but one completion and that was by F. A. Brendall and others on the Mary Miller farm, Section 29, Franklin Township, which was dry at a total depth of 3,975 feet. The Ohio Stock Food Co. is drilling on the company's own property, Section 9, Green Township, same county.

In Licking County the only change is a location for No. 4 on the David Wright farm, Section 16, Perry Township, by H. C. Farmer.

In Muskingum County, the Mid-East Oil Co. is drilling on the Walter Getter, Section 15, Perry Township. The Pure Oil Co. is starting a test on the Otis McKee, Section 5, Jackson Township, and William Kline and others are starting a test on the Ray Stine, Section 11, Clay Township.

Athens County failed to report any new completions, and only one change is reported and that is a location made by the Logan Gas Co. in No. 72-3,080 on the Sunday Creek Coal property, Section 29, Dover Township.

Meigs County

In Meigs County, Sutton Township, the Preston Oil Co.'s No. 5-1,284 on the A. J. and W. R. Easterday, is credited with a small gas well and good for 5 bbls. of oil from the upper Berea sand at from 1,789-1,805 feet, total depth of hole, 1,808 feet. Tyree and others got a dry hole in No. 8 on the Joseph Stobart, Section 17, in the upper Cow Run formation from 596-603 feet, and drilled to a total depth of 603 feet.

In Jackson County, Licking Township, the Ohio Fuel Gas Co.'s No. 1-3,263 on the J. A. Ford farm, which was drilled to the Madison formation which was topped at 2,683 feet, there being a slight showing in this well at from 2,628-2,6[illegible] feet. The well was then drilled to 2,7[illegible] then to 2,747 and finished at 2,753 feet and is being tested out. Penn Ohio Gas Co. is drilling No. 4 on the Leo Evans, Section 35, same township.

In Vinton County, Vinton Township, Townsend and others' second test on the Leo H. Quick farm, Section 6, was undoubtedly drilled too deep into the upper Berea sand which was topped at 1,0[illegible] feet and drilled 4 feet in that formation, hitting a heavy dose of water, and showing for about 1 bbl. a day. No gas was found in the hole.

In Lawrence County, Lawrence Township, the Inland Gas Corp.'s No. 5 on the Hecla Iron & Mining property, Section 18, found only a very small amount of gas, approximately 65,000 to 70,000 feet at from 3,333½-49½ feet, and was drilled to the Medina at a total depth of 3,430 feet.

In Guernsey County, the Logan Gas Co. made a location on the Loren C. Stocker farm, Section 9, Wheeling Township.

In Morgan County, the Penn Contracting Co. drilled in a light gas test on the C. A. Ewart farm, in fractional Section 5, the gas being found in the Salt sand at from 845-850 feet. Ohio Fuel Gas Co. made location for No. 1-3,466 on the C. O. Thomas, Lot 23, same township, and also for No. 4-3,471 on the T. J. Newburn, in the same lot. Same company is drilling No. 1-3,415 on the T. M. Frisby, Section 23, and drilling No. 1-3,447 on the T. J. Strode, Section 30, same township. Same company is drilling No. 6-3,47[illegible] on the C. F. Kennard, Section 3, Penn Township, Penn Oil & Gas Co.'s second test on the C. M. Nendenhall, Section 1[illegible] same township, by deeper drilling made an average gas producer in the lower Berea at from 1,625-44 feet and was sent to a total depth of 1,659 feet. It was first drilled to 932 feet only where a fairly good volume of gas was encountered, but went down in volume quite rapidly. Walker & Glass are drilling No. 26 C. W. Newsom, also in Penn Township.

The Pure Oil Co.'s second test on the Floyd Anderson farm, Section 4, Jackson Township, Muskingum County, is reported good for about 130 bbls. initial.

INDIANA FIELDS

Spencer County, in the extreme southern part of Indiana and north of Owensboro, Ky., is attracting more attention due to the showing of the well drilled by C. W. Randall and others on the Lee Strassel farm, near Rocky Hill, about 7 miles north of Rockport, where the pay was found at 1,280 feet. The well has all the earmarks of a good well, nothing large, but big enough to attract attention with a better showing than any well yet drilled in the county. When bailing a short time ago, 20 bbls. of crude was taken from the hole without lowering the oil in the hole. The Packard Oil Co.'s No. 3 on the Arthur Ray farm, Section 11, Huff Township, same county, is making the best showing of the three completions, and estimated around 15 bbls. No. 1 produced 12 bbls. and No. 2 showed 10 bbls., all having a light volume of gas along with the oil. No. 4 is drilling on the Ray farm. The Universal Oil Co. is reported to have a dry hole on the Mary E. Ludwig farm, Section 4, Clay Township, at a total depth of 1,280 feet.

(Continued on Page 97)

WEST TEXAS OIL PRODUCTION AND STORAGE FOR MONTH OF JANUARY

FORT WORTH, Tex., Mar. 16.—Production in the Permian Basin for the first month in the year totaled 11,564,865 bbls. and all of this save 294,897 bbls. was handled by trunk lines, tank car shipments and runs to local refineries. The 294,897 bbls. went to lease storage. However, that does not represent the amount run to steel storage on tank farms.

The total storage capacity in West Texas on February 1 amounted to 47,593,188 bbls. and 34,496,568 bbls. of this was filled, leaving room for 13,096,620 bbls.

Below are tables showing the production by pools and the storage by counties.

PRODUCTION AND PIPE LINE RUNS—WEST TEXAS—JANUARY, 1929

	Bbls.
Big Lake Field, Reagan County	587,889
Chalk Settles Field, Glasscock-Howard	1,397,278
Church & Fields, Crane County	845,894
Connell Field, Ector County	155
Harding Field, Howard County	466
Hendricks Field, Winkler County	5,263,979
Ira Field, Scurry County	746
Leck Field, Winkler County	65,373
McCamey-Taylor, Crane-Upton	328,175
McElroy Field, Crane County	401,366
McMillen Field, Runnels County	4,315
Noodle Creek Field, Jones County	178,239
O'Brien Field, Winkler	.....
Powell Field, Crockett County	62,318
Reynolds Field, Haskell County	1,950
Scarborough Field, Winkler County	7,010
Stephens Field, Fisher County	33,657
Skelly Field, Reagan County	2,739
Waddell Field, Crane County	689
Westbrook-Iatan Field, Mitchell County	79,103
Whear Field, Loving County	9,901
Yates Pool, Pecos County	2,294,223
Grand total	11,564,865

TOTAL PIPE LINE RUNS BY COUNTIES

	Bbls.
Crane	1,261,185
Crockett	70,048
Fisher	32,551
Howard-Glasscock	1,282,073
Jones	165,781
Loving	9,901
Mitchell	77,953
Pecos	2,219,582
Reagan	589,340
Runnels	4,435
Scurry	No runs
Upton	291,132
Winkler	5,265,967
Grand total	11,269,948
Estimated oil to lease storage for January	294,897

(Continued on Page 88)

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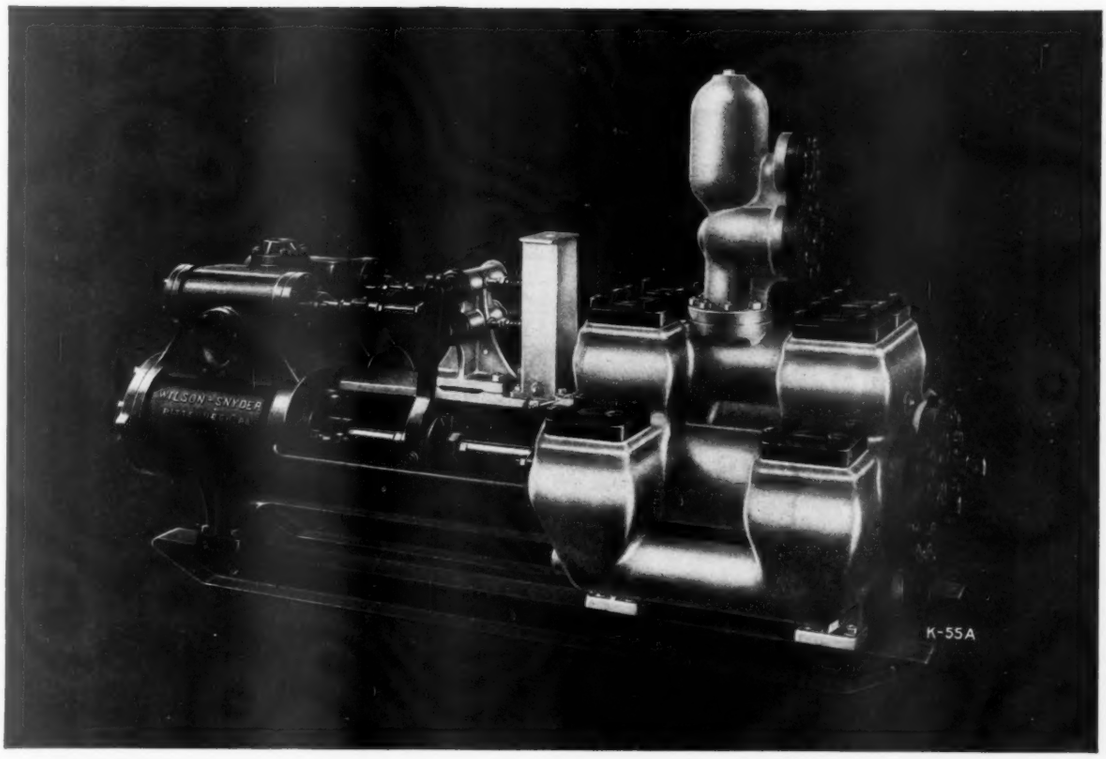

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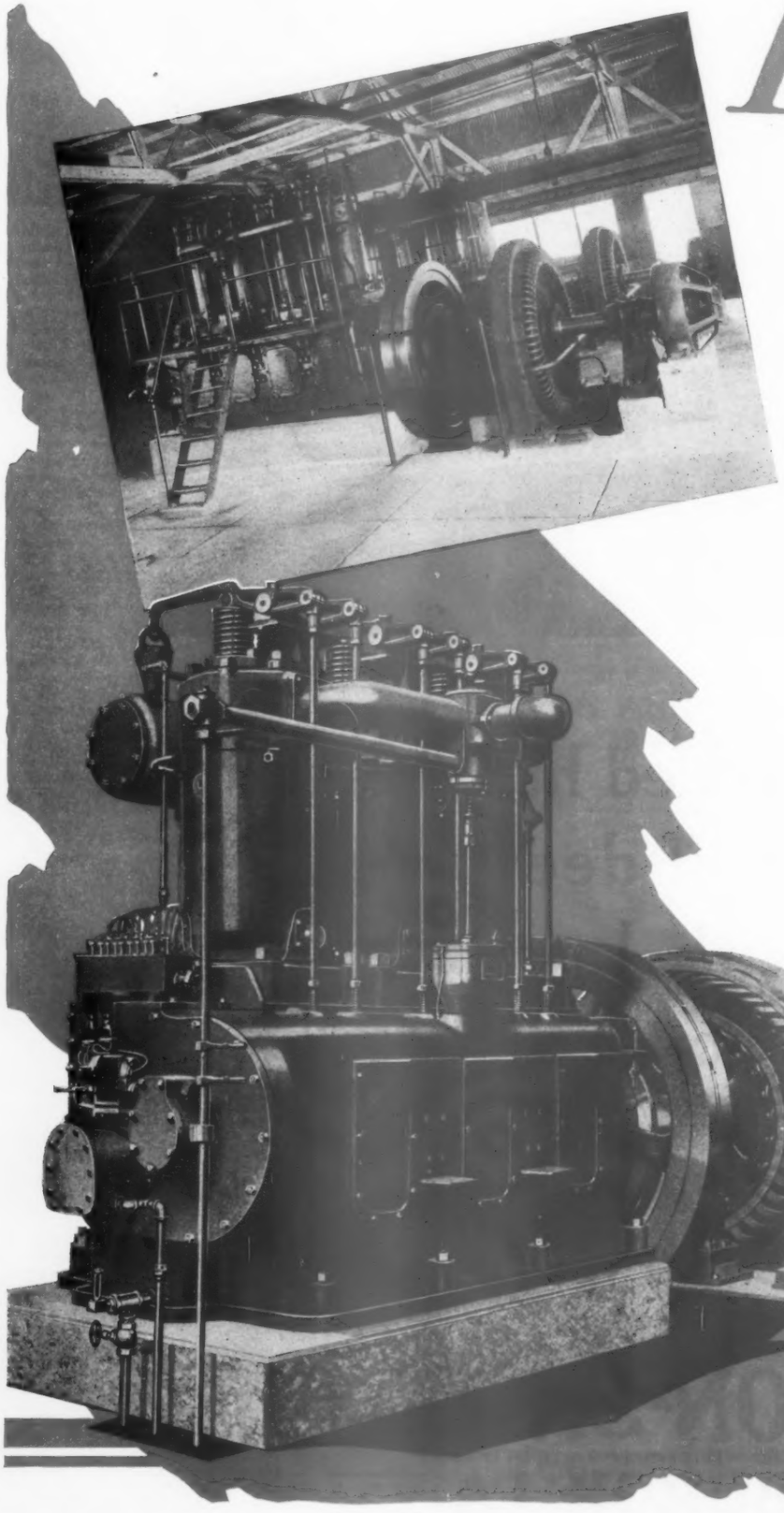

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1

To retain the friendship and business of all users of Hope Engines, and to maintain the splendid prestige built throughout the industry by Hope Engineering Company.

2

To complete the Cooper line by being in a position to recommend for such installations as can be better served by the vertical type, an engine that we can count upon to maintain our standards.

3

To capitalize upon the experience of the original manufacturers and their successors—Hope Engineering Company by adding Cooper experience, research, personnel, etc., to the end that Hope Gas Engines may continue the progress that has marked their manufacturing transition. Henceforth Cooper will be giving their best attention to the advancement of Hope Gas Engines.

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Butler Pool Now Probably Defined

West Virginia Had Most Completions but the Few Fair Producers Were in Southeast Ohio and Southwest Pennsylvania

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Mar. 18. — Most of the completions were located in West Virginia. Southeast Ohio and Southwest Pennsylvania had but few. A few of the larger companies are planning an intensive drilling campaign during the summer. It is stated that the South Penn Oil Co. will drill 500 wells in the old Bradford Field. However, if the plan is carried out the average size of the wells will be very small but in the aggregate the production will amount to considerable.

Unless some new producing territory is discovered in West Virginia or Southeast Ohio, operations during the same period will be confined to the old districts. There is still room for a good deal of this kind of work with chances for an occasional good producer.

At the present time the refiners are taking all of the Pennsylvania grade of crude. This is an encouraging feature for the eastern producer, despite the enormous production in the Mid-Continent and far western fields. The little old wells in the Eastern fields now have a greater value than at any time in the past. In many sections the producer's old wells, though very small, can be regarded as his bank account.

Few Fair Producers

Only a few good producers were completed during the week and all were located in Southeast Ohio and Pennsylvania. Probably some of the wells now drilling in the sand in Butler County, Pennsylvania, may bring Buffalo Township to the front again.

In the northwest quarter of Section 4, Jackson Township, Muskingum County, Ohio, the Pure Oil Co. drilled its second test on the Floyd Anderson farm through the Clinton sand. It produced 132 bbls. the first 24 hours after shot. It is the largest well completed in Southeast Ohio in a number of weeks.

In the northeast quarter of Section 1, Perry Township, Licking County, the Kundtz-Hulse Co., Inc., got a producer that placed 105 bbls. to its credit the first 24 hours after shot in the Clinton sand. In the southeast quarter of Section 14, Perry Township, Coshocton County, the Preston Oil Co.'s second test on the R. E. Van Winkle farm produced 55 bbls. the first 24 hours after shot in the same formation.

In the new pool in Buffalo Township, Butler County, the Phillips Gas & Oil Co. has completed in the Fifth sand a test on the Violet Hughan farm good for 125 bbls. a day. The location is in the southern end of the pool.

On the east side of the same pool, Smith & Co. have drilled through the Fifth sand on the Martin Palco farm. It is dry and is drilling to the Speechley sand. It now looks as if the pool had been defined.

WEST VIRGINIA

In Troy district, Gilmer County, C. M. Bennett & Co. have completed in the Big Injun sand a second test on the Howard Keister farm. It is a gasser. In DeKalb district, the Hope Natural Gas Co. has a gasser in the same formation at its No. 734 on the Drusilla Hardman farm.

In Center district, Calhoun County, the Hope Natural Gas Co. has a gasser in the Big Lime formation at No. 7,230 on the Alice B. Bennett farm.

In Jefferson district, Lincoln County, the Russell Gas Co. completed No. 4 on the James Cooper farm. It is a gasser in the Berea grit. In Center district, Wetzel County, the Myers Oil & Gas Co. has a Big Injun sand gasser at a second test on the George Myers farm.

In Church district, Wetzel County, the Manufacturers Light & Heat Co. drilled deeper No. 3 on the William Renner farm. It is a gasser in the Fifth sand. In Clay district, the Carnegie Natural Gas Co. has drilled deeper its test on the F. M. Wade farm. It is a duster in the Gordon sand. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. has a very light pumper in the Gordon sand on the E. and M. J. Allman farm.

On the waters of McFarlan Creek, Murphy district, Ritchie County, the South Penn Oil Co. has completed No. 72 on the Ritchie Mines tract. It is showing for a 4-bbl. pumper. In Center district, Calhoun County, on the Kanawha River, Godfrey L. Cabot has a rig completed on the Godfrey L. Cabot farm.

Roane County

On Rush Run, Smithfield district, Roane County, the United Fuel Gas Co. has completed in the Big Injun sand a light gasser on the J. C. Keffer farm. In Ravenwood district, Jackson County, the South Penn Oil Co.'s first test on the C. S. McCarty farm is showing good staying qualities. It was drilled into the Berea grit two months ago and is still holding up at 45 bbls. a day.

In Big Sandy district, Kanawha County, the United Fuel Gas Co. has completed in the Salt sand No. 2,548 on the King Land Co.'s property. It is a gasser good for 500,000 feet. In Scott district, Boone County, the same company has a similar gasser in the Berea grit at No. 1,894 on the Horse Creek Land & Mining Co.'s tract. In Curry district, Putnam County, Baker & Osborne are due in the sand on the Farmers & Shippers property.

In DeKalb district, Gilmer County, the McCall Drilling Co. has a 5-bbl. pumper in the Blue Monday sand at No. 5 on Riddle Brothers' lease No. 2. In the same district, the Gainer Farm Oil Co. has abandoned No. 4 on the Harriett Gainer farm.

Good Gasser in Mingo County

In Henry district, Mingo County, the Red Jacket Coal & Coke Co. has a Maxon sand gasser good for 5,500,000 feet at its No. 5 on its own property. In Ravenwood district, Jackson County, the Heck Oil Co. has started to drill No. 3 on the George Kuhl estate, and No. 3 on the O. J. Brown farm. In Sherman district, Boone County, the Hope Construction & Refining Co. shot No. 2 on the S. C. B. Rice farm, increasing its production from 2 to 5 bbls. a day.

On McFarlan Creek, Murphy district, Ritchie County, the Hope Construction & Refining Co. has completed a test on the Anna M. Wilson farm. It is a duster in the Big Injun sand. A little show of gas was developed in the Maxon sand. It will be abandoned. In the same district, the Hope Natural Gas Co. has a 10-bbl. pumper in the Big Injun sand on the Lee Collins farm. In Troy district, Gilmer County, C. M. Bennett has the rig completed for a second test on the H. B. Keister farm.

Clay County

In Henry district, Clay County, the United Fuel Gas Co. has a 500,000-foot gasser in the Big Injun sand at No. 2,534 on the Brown, Goshorn & Swa[illegible] tract. The Virginian Gasoline & Oil C[illegible] has a rig up on the James Reed farm. In Clay district, Wirt County, Dail[illegible] Brothers have a very light pumper in the Cow Run sand on the James Adam[illegible] farm. The same parties are drilling on the D. E. Smith farm.

On Hickory Branch of Twelve Pole Creek, 700 feet west of the test on the M. C. Burnher farm, F. H. Yates has drilled No. 1 Alla Phelps farm into the Maxon sand. It is a gasser good for 500,000 feet. On Wills Creek, Big Sandy district, Kanawha County, 600 feet east of the West Virginia Oil Co.'s second test on the Wamock-Bird farm, the Berea Oil & Gas Co. has completed a test on the L. B. Campbell farm. It is a very light pumper in the Weir sand.

On McFarlan Creek, Murphy district, Ritchie County, the Hope Construction & Refining Co. is drilling on the Anna M. Wilson farm to the Berea grit. On Hartley Run of Sandy Creek, Ravenwood district, Jackson County, the Heck Oil Co. has started to drill No. 4 on the H. J. Brown farm.

Drilling and Starting Tests

In Ripley district, Jackson County, the H. F. Parsons Oil & Gas Co. has started to drill on the George W. Coast farm. In De Kalb district, Gilmer County, Frank Golden and others have started to drill on the G. M. Miller farm. In De Kalb district, Gilmer County, the Hope Natural Gas Co. is drilling deeper its second test on the Drusilla Hardman farm. In the same district the South Penn Oil Co. has a rig up on the R. J. Ellis farm.

In Sherman district, Calhoun County, the Hope Natural Gas Co. has started to drill on the Emma Johnson farm. The same company has a rig up on the Clinton Shock farm. A location has been made on the M. Westfall farm and a rig is building on the F. S. Barr farm. In Lee district the same company is rigging up on the A. J. Ball farm.

In Lee district, Calhoun County, F. F. McIntosh is rigging up on the John Slider farm. In Sherman district, C. B. Lewis is rigging up on the Lawrence Hamilton farm. In Jefferson district, Lincoln County, the United Fuel Gas Co. has three rigs up and a well drilling on the Horse Creek Land & Mining Co. tract. In the same district the same company has a rig up on the S. L. Oxley farm. Earl Cameron has four rigs up and one well drilling on the Goldie Stone farm. In Peytonia and Scott districts, Boone County, the Owens Bottle Machine Co. is drilling two wells. In Grant district, Cabell County, the Harshbarger Oil & Gas Co. has a rig up on the G. C. Blackwood farm. The Kentucky & West Virginia Gas Co. has a rig up on the Thomas McCallister farm.

Marshall County

In Sand Hill district, Marshall County, the Myers Oil & Gas Co. has a rig up on the C. M. Strickland farm. In the same district, Heineman & Co. are due in the Big Injun sand on the H. W. Ernest farm. In Liberty district, the Manufacturers Light & Heat Co. is pulling the tubing to drill deeper its test on the P. D. Muston farm. In the Kanawha River, Center district, Calhoun County, W. H. Bickel has the rig completed for another test on the Betts heirs farm. In Center district, Wetzel County, Burley & Orndoff are due in the Gordon sand on the Charles Pyles farm.

In Grant district, Ritchie County, Robert Elder and others have a rig up on the M. A. Starkey farm. In Murphy district, the Miller Farm Oil Co. is due in the Maxon sand on the B. F. Miller farm.

(Gontinued on Page 92)

EXCEPTIONALLY GOOD PRODUCERS COMPLETED IN OHIO COUNTY, KY.

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Mar. 18.—High water and impassable roads kept the operators out of the fields to a large extent and hampered completing wells that were almost ready to shoot and clean out ready to produce. The western area was the hardest hit. In some sections of Ohio and Daviess Counties where the most activity prevails in development work a large portion of some of the big producing leases are covered with water. This is, of course in the lowlands, but the pumps cannot be worked. It is surprising there are not better highways as the State has the greatest asphalt beds in the country. Now that the oil people are spending a large amount of money developing the oil and gas industry and are compelled to pay heavy taxes something should be done for them in giving them a few roads so they can get their drilling material to their leases.

Week's Work

A summary of the week's work in the Kentucky fields show 14 completions, 11 producers with an initial production of 640 bbls., 3 dry holes and no gas wells.

County—	Oil Comp.	wells	Prod.	Dry
Ohio	9	8	565	1
Daviess	4	3	75	1
McLean	1	0	0	1
Total	14	11	640	3

Ohio County Wells

Ohio County did very well in existing conditions in bringing in some exceptionally fine producers, the best for several weeks.

James C. Ellis and others had good success in recent developments in the eastern portion of the Ambrose-Weller Pool, in Ohio County, as Nos. 5 and 6 on the Ira Moseley farm are reported at 100 bbls. initial each, and No. 2 on the D. W. Smith farm, same area, is reported equally good. Same parties drilled in a well on the W. P. Howard farm, in the Ward Pool, northwest of the Ambrose, reported showing for 40 bbls. initial at 530 feet. In this well a string of 486 feet of casing was set, sand found at from 486 to 500 feet and shot with 80 quarts.

Daley and Lowman's last completion on the Ollie Ezell farm, near Bells Run, northwest of the Ambrose Pool, is reported making as good a showing as any well on the lease, around 100 bbls. initial.

Mecca Oil Co.'s Nos. 19 and 20, on the Cora Wells farm, in the Ambrose Pool, are reported with an initial production of 50 and 60 bbls. respectively. This has been a remarkably fine producing lease like others that adjoin it, being in the heart of the Ambrose Pool.

Near the village of Herbert, H. L. Ogle and others' No. 1 on the Jim D. Kellem farm, is estimated good for an initial of 15 bbls.

D. T. Bollins and others drilled in a dry hole in a second test on the J. R. Dickens 80 acres, in the Whittaker Pool, north and west of the Ambrose Pool, and southeast of Whitesville, at a depth of 625 feet.

Daviess County Wells

In the Utica area of Daviess County, the Petroleum Co.'s No. 11, on the E. L. Burns farm, is reported at 30 bbls. initial, with No. 12 under way.

Petroleum Exploration Co.'s second at-

(Continued on Page 94)

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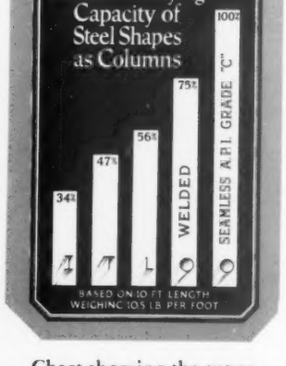

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The seamless pipe legs will carry heavy over-loading. The structural members used for bracing, and the connection clamps have approximately equal strength values. Every part of the derrick approaches an equal efficiency in carrying its share of the load. This eliminates excess weight in any one part of the structure and prevents failure from sub-normal strength of any member.

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ROCKY MOUNTAIN AREA

(Continued from Page 53)

structure. One of the tests will be drilled on the Charter Oak ranch and the other on the Sargeant farm. On the latter a water well drilled 60 feet 13 years ago encountered a gas pocket and 6 years ago another well was drilled 1,200 feet which is still making some gas. Location of the wells is being withheld pending completion of certain details.

The Somir Petroleum Co., which drilled the discovery well on the Hiawatha Dome in Moffat County, has opened offices at 212 Continental Oil Co. building in Denvery with W. A. Myers in charge. Mr. Myers was in charge of operations when the discovery well was drilled in. Recently the Ohio Oil Co. took over the Somir operation and included it in the acreage to be developed by the Mountain Fuel Supply Co. Mr. Myers states that a half interest only in the holdings were sold to the Ohio company along with a contract for the sale of its gas.

In Yuma County, the Major Petroleum, Inc.'s No. 1 Blackwolf, SE NW, Section 7-2s-43, is being abandoned at 1,425 feet due to a crooked hole. The rig has been skidded 150 feet and No. 1-A is about ready to spud.

The McDeb Drilling Co.'s No. 1 Fitzsimmons, NE Section 7-4s-66, Arapahoe County, which has been standing at 3,660 feet for several months, is preparing to resume. Four thousand feet of 6¼-inch casing is being trucked to the well and will be run to bottom before drilling is resumed.

The shallow test being drilled in the Lyons Townsite in Boulder County, C. E. Johnson's No. 1 McFadden, Section 18-3n-70, is through the Ingleside which showed some oil saturation and about 1 bbl. of water per day, and is drilling at 205 feet in hard lime believed to be the caprock over the Fountain sand.

Magnetometer Test

In Huerfano County, the Parker Club, Inc.'s No. 1 fee, Section 4-28s-68, is bottomed at 1,378 feet in hard siliceous lime. The igneous rock which has been encountered is believed to be merely a stringer and to have little effect on the prospects for the well. A magetometer test was made the past week and it did not indicate the presence of any large mass of igneous rock below the present bottom. The Kinney-Coastal Oil Co. has a joint interest in this well.

In Moffat County, the Midwest Refining Co.'s No. 7-M Parkinson, NW NW, Section 23-4n-92, Iles Dome, was drilled to 3,404 feet in soft gray sand. At 3,375 feet, the oil which had been standing 1,800 feet in the hole, rose to 2,400 feet and at 3,400 feet it rose another 100 feet. Same company's No. 24-SD, SE NW, Section 22-4-92, is bottomed at 3,001 feet and fishing for the 10-inch bit. The Texas Production Co.'s No. 36 Lloyd, SE cor., Section 21-4-92, is clamping up the 8¼-inch at a total depth of 3,263 feet. Thomas McLaughlin and others' No. 1 Williams, NW SW, Section 2-3-92, is shut down at 3,255 feet waiting for fuel which has been delayed by bad roads. On the Moffat Dome, the Texas Production Co.'s No. 11 Knowlton, SE cor., Section 33-5-91, is drilling out cement at 4,343 feet preliminary to drilling into the Morrison sand. This test will go on through the Morrison and set another string on top of the Sundance before drilling in. The Texas Production Co. is the only operator with leases on this structure with the exception of the Kinney-Coastal Oil Co. which has a lease on Section 16-4-92, state land, a part of which appears to be within the closing contour and which will be a good shot for production if the Knowlton well comes in as an oiler. The Texas Production Co.'s No. 5 Walter Wick, Section 10-4-91, is drilling at 4,523 feet.

In Fremont County, the Delisa Oil Co.'s No. 1, SE SW, Section 19-19-69, was dry and abandoned at 2,850 feet, and the Eureka Oil Co.'s No. 2, SE SE, Section 2-19-70, was completed at 1,533 feet as a 20-bbl. well. The Eureka's No. 2 Beltramo, SE SE, Section 2-19-70, is showing for a producer at 2,000 feet.

NEW MEXICO

The Empire Gas & Fuel Co.'s No. 1-C State, SW cor., Section 12-21-34, in the San Simion district in Lea County, New Mexico, proved a disappointment and is being abandoned at a total depth of 4,194 feet. It encountered hot sulphur water at 3,860 feet. This well was spudded in last November following the drilling of its No. 1 State, NE cor. NW, Section 8-21-35, a little less than 2 miles to the east and half a mile to the north. The last-named well was listed as a completion this week at 3,835 feet, total depth, with a production of 100 bbls. a day after having been on a production test for several months in which the quantity of oil and water was about equally divided. The second well, No. 1-C State, topped the salt at 1,830 feet, and appeared to be running high but it was found that the lower beds had thickened to some extent. It bottomed the salt at 3,535 feet, and topped the brown lime at 3,575 feet and the white lime at 4,163-73 feet. The elevation is 3,714 feet.

The Marland Production Co.'s No. 1 Lockhart, NE NW NW, Section 31-21-36, in the Eunice district in Lea County, continues to hold the spotlight. At 3,990 feet it swabbed 207 bbls. on February 27. This past week it was shot at 3,950-60, 3,870-80 and 3,825-30 feet with 40 quarts each and that day made 297 bbls. It was again shot at 3,871-89 feet with 60 quarts and while no gauge was taken, it looked as if there had been an increase. This was followed with a shot of 60 quarts at 3,950-68 feet and it gauged 11½ bbls. an hour in a 12-hour test. The Texas & Pacific Coal & Oil Co.'s No. 1 State, SE cor. SW, Section 22-23-36, came in for some attention the past week when it encountered a gas horizon at 2,810-18 feet. The flow of gas was approximately 2,000,000 feet and drilling continued. At last reports it was drilling at 3,214 feet in lime and sand. In the Jal district, the Midwest Refining Co.'s No. 22 Gregory, NW SE SW Section 31-25-37, has completed cellar and its No. 13 Farnsworth, NE NE, Section 13-26-36, is drilling at 2,920 feet in hard lime. It had a good show of oil at 2,840 feet. Same company's No. 19 Farnsworth, SW SW, Section 12-26-37, is still drilling by tools at a total depth of 3,888 feet. Cranfill & Reynolds' No. 1 Wilson, NW NE, Section 23-25-36, is drilling at 1,710 feet in salt, and the Pueblo Oil Co.'s No. 1 Crosby, SW SW, Section 29-25-37, is drilling at 610 feet in the red beds. The Texas Production Co.'s No. 1 Shepherd, SE cor. NE, Section 6-26-37, is milling on fishing tools at 3,268 feet, and its No. 1 Moberly, NW SE, Section 17-26-37, is fishing at 3,540 feet. The Gypsy Oil Co.'s No. 1 Mattern, SW cor. SE, Section 24-21-36, in the Eunice district, is drilling below 1,550 feet in salt and anhydrite. The salt was topped at 1,370 feet. Henderson, Dexter & Blair's No. 1 McDonald & Jewett, SE cor., Section 18-20-34, cemented the 10-inch at 940 feet but failed to get a water shutoff. The Vacuum Oil Co.'s No. 1 State, CWL, Section 13-17-34, is drilling at 1,600 feet in red shale. The Marland Production Co.'s No. 1 Reed, NE cor. SW, Section 22-20-36, is drilling at 4,290 feet in lime, and its No. 1 Warren, SW SW, Section 28-20-38, is drilling at 4,175 feet in lime and showing a little gas. There was a show of oil at 4,140-44 feet. Cecil Bordages' No. 1 Hughes, C S half, Section 27-19-38, in the Hobbs district, is reported temporarily abandoned at 4,012 feet. The Texas Production Co.'s No. 1 Beulah Lynch, NW cor. SE, Section 34-20-34, is drilling at 2,980 feet in salt, and the Midwest Refining Co.'s No. 31 Capps, SW cor., Section 3-19-38, in the Hobbs district, an offset to its No. 1 State, is ready to spud. The Marland Production Co.'s No. 1 Meyer, SW cor. NW, Section 26-20-37, in the Eunice district, has been shut in after plugging back and rig is being torn down. It is estimated good for 1,500,000 feet of gas which built up a pressure of 1,200 pounds in 24 hours.

Eddy County

In Eddy County, Flynn, Welch & Yates' No. 1 Jackson, C NE, Section 13-17-30, northeast of the Artesia Pool, which attracted renewed interest last week when it encountered another break in the lime at 3,495 feet which about doubled the production, is drilling at 3,538 feet in lime. It flowed 114 bbls. in four hours through a 6-inch line. Later it gauged 270 bbls. in 24 hours. Another break in the lime is expected at almost any time. The horizon showing the additional production was about 10 feet thick. The Pecos Valley Gas Co.'s No. 3 Vandergriff, NE NW SE (corrected), Section 5-17-28, is drilling at 510 feet. This well is being drilled to increase the company's gas supply for the new line that is being laid from this lease to the town of Roswell. Lateral lines will be laid to serve Lake Arthur, Hagerman, Greenfield and Dexter. Flynn, Welch & Yates' No. 56 State, Section 6-19-28, in the Artesia district, is drilling at 3,080 feet.

San Juan County

In San Juan County, in the northwestern corner of the State, the Angel Peak Oil Co.'s No. 1 Garland, NE NE, Section 11-28-11, in the Kutz Canon district, is drilling at 2,150 feet and is reported to be through the Picture Cliff. The company estimates that the gas flow had increased to between 5,000,000 and 6,000,000 feet a day. The well is to be carried on down to the base of the Mesa Verde. The Childers Drilling & Producing Co.'s No. 2, NW NW, Section 24-31-16, on the Westwater Dome in the Ute Reservation, lowered the 6¼-inch to 2,070 feet to shut off cavy ground. After cementing at that depth, drilling was resumed. The hole is in the top of the Dakota and the first sand is expected at almost any time. The Continental Oil Co.'s No. 17, Section 2-29-19, the deep test on the Rattlesnake Dome, has finished running casing and is drilling at 6,520 feet and believed to be close to a sand.

WYOMING

Active drilling operations in Wyoming probably are at the lowest ebb of any time in recent years due to the continued cold weather, snow storms and unfavorable conditions. Most of the wildcats will remain shut down until conditions improve. Two wells close to the completion stage in Oregon Basin in Park County show rather discouraging results this week. The Cody Petroleum Co.'s No. 6 Klindt, NE NE, Section 7-51-100, showed for a producer in the top of the Embar, flowing at the rate of 500 bbls. a day at 3,755 feet, but upon drilling 15 feet deeper water came in and rose 2,000 feet in the hole. An effort is being made to plug off the water and save it as a producer. This well is a little to the west of the company's producers on the west flank of the saddle connecting the north and south domes and indicates that the productive area in the saddle will be rather narrow. The company has been troubled with water for some time in the wells along the east side of Section 7, and the appearance of water in No. 6 Klindt was not a surprise. The Wisconsin Holding Co.'s No. 2 Rousch, NW SW SW, Section 9-51-100, is reported to have drilled into water in the Embar, which was topped at 3,903 feet, where the 6¼-inch was set. This well is approximately one-fourth of a mile east and north of the Continental Oil Co.'s No. 1-A State which came in for around 900 bbls., but showed some water almost from the start. The results in this well indicate that the Continental's well was on the edge and that the productive territory between the north and south domes will not be very large.

The appearance of water in the Cody company's No. 6 Klindt makes the prospects for the Big Horn Petroleum Co.'s No. 1 Trumbull, SW NE, Section 7-51-100, not very promising as it is still farther to the west. It was bottomed at 3,883 feet at last reports. The Oregon-Wyoming Oil & Gas Co.'s No. 1, Section 30-52-101, Horse Center, is reported resuming at 1,030 feet, at which depth casing was set last December. The Wyoming Western Oil Co.'s No. 3 Hough, SE SE, Section 18-51-100, Oregon Basin, is rigging up cable tools at 4,006 feet to drill in, and the Cody Petroleum Co.'s No. 1 Garner, SW NE, Section 27-51-101, is changing over to cable tools at 2,808 feet. Same company's No. 1 Nelson, SE NE, Section 4-51-102, Diamond Basin, is drilling at 2,800 feet and carrying the 8¼-inch at 2,780 feet. It topped the red beds at 2,700 feet. On the Frannie Dome, the Midwest Refining Co.'s No. 36 Rosenberg, SE cor. NW, Section 25-58-98, is drilling at 1,212 feet in red and gray sticky mud, and its No. No. 1 Kirk, SE cor., Section 23-38-98, is waiting for cement to set at 1,490 feet.

Hot Springs County

In Hot Springs County, the Texas Production Co.'s No. 1, Section 23-45-100, Skelton Dome, is shut down at 1,900 feet, and the Cody Petroleum Co.'s No. 1, NW SW, Section 27-57-96, Cowley Dome, has commenced spudding with standard rig and tools. The Prairie Oil & Gas Co.'s No. 1 Chilcote, Section 35-56-95, Little Sheep Mountain, is bottomed at 2,625 feet and underreaming the 8¼-inch.

The Ohio Oil Co. has started a new operation in the Rock Creek Field in Carbon County in its No. 10 Alva Dickinson, Section 34-20-78. This is the only well the company is drilling at present in Wyoming. The Producers & Refiners Corp.'s No. 1, Section 14-25-89, Sherrard Dome, is moving in rig to replace the one destroyed recently when the gas flow caught fire. Total depth of the hole is 3,027 feet. All other operations of this company with the exception of one in Sand Draw in Fremont County are shut down for the winter.

In Natrona County, M. C. Weisman's No. 3, SE cor., Section 36-37-82, North Casper Creek, is drilling again, and encountered a gas sand at 986 feet. It will continue as a test to the Embar and Tensleep. The quantity of gas was reported to be larger than found in the same horizon in Nos. 1 and 2.

The Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, Pilot Butte Dome, Fremont County is drilling in dark shale at 1,350 feet. It had a show of oil at 1,300 feet.

The California Co.'s wells are shut down with the exception of No. 1 Union Pacific, Section 7-17-116, Muddy Creek Dome in Uinta County, which is drilling at 2,909 feet in white sandy lime. The Mountain Fuel Supply Co.'s No. 1 Humphreys, Section 2-12-101, Canon Creek Dome, Sweetwater County, is bottomed at 2,535 feet and pulling the 10-inch casing. It had 1,000,000 feet of gas at 2,450 feet. Same company's No. 1 Arnold, NE Section 24-19-104, Middle Baxter Basin, is rigged and ready to spud.

The Carter Oil Co.'s No. 1 State, SW SW, Section 16-48-82, Billy Creek Dome, in Johnson Coutny, north of Salt Creek, which gives indications of opening a new light oil pool in the first Wall Creek, was opened this week and the hole was found to be caving. Tankage for about 3,000 bbls. has been erected and a test will be made for a few days before shutting in until determined what will be done with the oil. Total depth is 3,240 feet. On account of communication being interrupted by the storms, no late news has been received. It is believed the well will make close to 1,000 bbls.

UTAH

Interest in Utah wildcatting, which has been of a rather negative character until the past few weeks, continues to center on a few wells that are at interesting stages. The Continental Oil Co.'s No. 1, Section 22-43-22, on the Boundary Butte structure in San Juan County, which has been making 5,000,000 to 6,000,000 feet of wet gas, is drilling at 4,550 feet, but there has been no change in the quantity of gas. The Phillips Petroleum Co.'s No. 1 Shick, C NE, Section 16-27-16, in Wayne County, is in the top of a sand at 4,750 feet and is shut down for engine repairs. It is reported the indications are more favorable than any so far found and that there are distinct odors of oil and gas coming out of the hole. This is a Pennsylvanian test and it is supposed to be close to the Hermosa sand. The Western Venture Corp.'s No. 1 Spahr, Section 8-5s-21, on the Dog Valley structure in Uinta County, which has been standing for some time at 435 feet, is reported preparing to resume under a contract let to E. O. Rhinesmith to carry it down to the bottom of the Wasatch expected at 1,600-1,700 feet. The 10 and 8¼-inch casing is reported to have been purchased.

The Signal Petroleum Co.'s No. 1, Section 7-21-19, in the Crescent area in

Grand County, is reported shut down at 2,400 feet and the crew to have returned to California upon receipt of a telegram that all of the company's holdings had been sold to another firm. The Signal Petroleum Co. recently took over this well from the Sandburg interests and resumed operations, but had not yet cleared the hole of iron when operations were suspended. The Utah Southern Oil Co.'s No. 1 King, Section 13-23-20, on the Salt Valley Dome in Grand County, is preparing to resume after being shut down for some time at 3,001 feet in sandy lime, that being the contract depth. Same company's No. 1-A J. L. Shafer, Section 36-26-20, on the Cane Creek Dome, is drilling in salt at 3,001 feet.

The Maude Ellen Oil Co.'s No. 1, Section 28-3s-21, on the Neal Dome in Uinta County, which has been shut down at 1,450 feet waiting for materials, is resuming. The Utah-Pennsylvania Oil Co.'s Penrose test on Section 3-10n-4w, in Box Elder County, is shut down for the winter at 2,150 feet. The 8¼-inch was landed at 2,100 feet for a formation shutoff. The Price River Petroleum Co.'s No. 1, Section 16-14s-10e, in Carbon County, is shut down at 3,074 feet, and the Beaver Valley Oil Co.'s No. 1, Section 20-25-9w, in Millard County, is shut down at 3,425 feet, and the Diamond Oil Co.'s No. 4, SE SW, Section 16-8s-5e, is a location.

MONTANA

In the Sunburst Field, the No. 3 Harte on Section 7-34-1 is still holding up at 500 bbls. production and the adjoining wells are also doing better, No. 2 Harte on the same section is now making 75 bbls. instead of the 50 bbls. reported last week. No. 4 is the only well in the pool that has failed to increase its production and the owners are still hopeful that after the water starts to go down this well will also come back heavy.

Sunburst Field is now expecting a great drilling and development campaign the coming season. This is based on President Hoover's statement on the matter of no new permits being issued. Most of the operating companies in Sunburst are prospecting in other parts of the State for new fields and the operators have made statements that in the coming season there were several promising wildcat areas that would likely yield a field on development. Now with the right to obtain permits withdrawn, the operators will be unable to obtain title to these holdings and as a result, there will be little wildcat development while operators will turn all their energies towards developing the existing fields where there is still much drilling to be done before the area is completely developed.

The Cosmos Petroleum Co. has started the movement by placing its wildcatting strings that are located in the Pondera Field for the winter, on trucks and moving same to the Sunburst Field where the tools will be used in the developing of the Cosmos Petroleum Co.'s leases in Sunburst. The Western Natural Gas Co. is moving a wildcat rig back to a location in the gas area of the Sweetgrass Hills area and will drill a well there on Section 4-37-4 and other firms are expected to follow the lead of these companies in the near future.

In Sunburst the roads are now open again but very soft; the mud is deep, but drying rapidly. Operators going back to start up their wells that have been shut down find that the frost has penetrated water supply lines buried 4 feet under the surface and this will entail a great amount of work before normal operation can be resumed.

New Gas Lines

The reports of much new gas line construction in eastern and northern Montana in the coming season continue. The proposed new system would include a pipe line from the Glendive Field in eastern Montana to the Sunburst Field, thus giving a live input at each end and having supplementary supply lines from the Bowes and Bowdoin Fields. The present system in eastern Montana comprises a line into the Black Hills of South Dakota and the prospective lines comprise a system across North Dakota to Fargo, serving cities and towns along the route.

It is not believed there is enough gas supply to warrant such a line at this time, though the South Dakota line could be extended through several cities and towns to the Billy Creek Field in Wyoming, which has no outlet for its gas at present.

ROCKY MOUNTAIN PRODUCTION
Daily Average Runs Week Ended March 16

WYOMING	
Salt Creek	28,460
Big Muddy	2,350
Grass Creek	2,170
Elk Basin	830
Ferris	20
Rock River	2,350
Lance Creek	280
La Barge	2,040
Poison Spider	1,140
Oregon Basin	2,550
Osage	290
Lander	560
Byron	40
Lost Soldier	3,520
Simpson Ridge	60
Dutton Creek	50
Rex Lake	130
Hamilton Dome	600
Greybull	10
Total Wyoming	47,450
MONTANA	
Cat Creek	1,370
Kevin-Sunburst	5,420
Pondera	2,300
Total Montana	9,090
COLORADO	
Florence	1,329
Moffat	1,085
Fort Collins	2,299
Ilex Dome	1,448
Rangely	100
Tow Creek	417
Boulder	25
Total Colorado	6,757
NEW MEXICO	
Rattlesnake	675
Hogback	510
Artesia	962
Cap Rock	119
Table Mesa	.....
Total New Mexico	2,266
Total Rocky Mountain	65,563

MICHIGAN FIELDS

(Continued from Page 56)

are the only ones selling more than 20 per cent of their open flow capacity. Mr. Goldboss has contracted with the Wellman Oil Co. of Grand Rapids for 10,000 bbls. at a reported price of 70 cents per barrel. The Wellman company has a 2-inch line laid from the Pere Marquette Railroad to the Wright Oil Co.'s Giles lease and has facilities for loading two tank cars at a spot, only.

Eight new locations were announced in Laketon Township: Johnson Oil Refining Co.'s Nos. 10, 11 and 12 Thompson, SW NE, Section 12-10-17; Double Shot Oil Co.'s No. 2 H. Dykstra, NW SE, Section 12-10-17; A. J. Dobbelinger's No. 1 F. Eadus, SE NE, Section 12-10-17; Eureka Gas & Oil Co.'s No. 1 H. Buteau, SE NE, Section 12-10-17; Wiser Oil Co.'s No. 1 Osgood, NE NE, Section 11-10-17; and the Eagle Oil Co.'s No. 1 Harm Doctor, NE SE, Section 12-10-17.

Three new locations were announced for Muskegon Township: Muskegon Oil Corp.'s No. 2 Nichols, NE NW, Section 8-10-16; L. R. Henley and others' No. 2 Koning, NW SW, Section 7-10-16; and C. W. Porter's No. 1 F. Dietrich, SW SW, Section 7-10-16.

Newaygo County

Location of a fourth wildcat well in Newaygo County, which adjoins Muskegon County on the east, was announced by Clare Kempf and Harry D. Reber, of Fremont.

The new well will be drilled on a block of 3,000 acres assigned to the Sherman Oil & Gas Co. It will be on the farm of Joseph Hoppa, Jr., SW SW, Section 22-13-13, Sherman Township.

The Newaygo Gas & Oil Co.'s No. 1 A. J. Bates well, same township, has practically completed rigging up. It is on the A. J. Bates property, NE SE, Section 12-13-13, Sherman Township.

Frank Stover has started to move in for the Newaygo Oil & Gas Co.'s No. 1 Woodward and Hatch, SE SE, Section 5-12-12, Brooks Township. This well is about 2 miles northeast of Newaygo and will be a 5,000-foot test.

The F. Ranke Oil & Gas Co., of Chicago, is reported to be considering drilling a fifth wildcat in Newaygo County.

Ottawa County

The reorganized Ottawa Petroleum Co. and the Crude Oil Co. of Michigan, have announced the first wildcat location in Ottawa County, south of Muskegon, No. 1 Comstock Konkle, NE cor. NE SE, Section 27-8-15, Crockery Township, about 5 miles east of Grand Haven and about 2½ miles south of Nunica.

Officers of the Ottawa Petroleum Co., formed by combination of the Ottawa Oil Co. and the Midwest Petroleum Co., both of Grand Haven, follow: President, William M. Connelly, of Spring Lake; vice president, C. L. Bullock, of Muskegon; secretary, H. A. Brink, of Spring Lake; and treasurer, W. E. Slater, of Nunica. Directors include H. H. Hillman, Grand Haven; Paul Johnson, Grand Haven; Henry P. Zwemer, of Holland; B. P. Sherwood and Carl T. Bower, both of Spring Lake. Mr. Brink also is secretary of the Crude Oil Co. of Michigan.

Barry County

Supervisors of Barry County, in the central southern part of the lower peninsula of Michigan, have taken leases on 40,000 acres throughout the county and are trying to place at least 5,000 acres in each township. The leases are in the hands of M. O. Hill, county clerk, as representative of the supervisors as individuals.

Mt. Pleasant Field

Two wells more than 3 miles apart, on opposite sides of production in the Mt. Pleasant oil field, held attention of operators as they neared the Dundee sands.

The Pure Oil Co.'s No. 1 on property of the Consumers Power Co., NE NE, Section 20-14-2, Greendale Township, Midland County, was casing at about 3,150 feet. It is about a mile southeast of the three Pure Oil Co. wells in Section 18, of Greendale Township.

The Rockford Oil Syndicate's No. 1 Harris, SE SW, Section 11-14-3, Chippewa Township, Isabella County, is drilling at 2,850 feet. It is on the north side of M-20 a mile west of the Chippewa Oil Co.'s No. 1 Jocelyn, SE SW, Section 12-14-3.

Michigan Association

Nine new directors for the Michigan Oil & Gas Association to succeed the members of the original executive committee, all of whom resigned effective March 20, will be elected this week. Each of the more than 60 members is entitled to vote for nine men.

Officers who resigned effective March 20 were: President, E. J. Bouwsma, of the Citizens Petroleum Co.; vice presidents, Charles H. Caswell, of the Lima Oil Corp., and J. T. Norris, of Norris and Smith; secretary, John G. Turner, of the Diamond Oil & Gas Co., and treasurer, E. C. Shields, of the Joliet-Morris Development Co. Other resigning members of the association were: R. G. Bechtel, of the Dixie Oil Co.; Oscar Davis, of the Johnson Oil & Refining Co., and Guy I. Warren, of the Swastika Oil & Gas Co. Any of the resigning directors are eligible to re-election.

Pollution of the public lakes and streams of Michigan, heretofore a hunting, fishing and resort state, is a problem which is now facing the Michigan conservation commission and oil operators. The Michigan Oil & Gas Association recognized the situation by appointing special pollution committee: Chairman, Guy I. Warren, of the Swastika Oil & Gas Co.; T. M. Simpson, of the Continental Motors; Charles H. Caswell, of the Lima Oil Corp.; Willard I. Foster, of the Lake Shore Petroleum Co., and Noah Sark, of the Johnson Oil & Refining Co.

SOUTHWEST TEXAS

(Continued from Page 49)

666, location 660 feet to south line, 150 feet to east line.

Humble Oil & Refining Co.'s No. 21 Kohler, Survey 396, location 545 feet to east line, 495 feet to north line.

Gonzales County

Benedum & Trees' No. 1 J. E. Lamkin estate, Winslow Turner Survey, has derrick up south of Indian's No. 1 Karnstadt and due south of discovery well.

Kleberg County

Humble Oil & Refining Co.'s No. B-5 Dennett, K.T.&I. Survey, location 4[illegible] feet north of No. 1.

Victoria County

Humble Oil & Refining Co.'s No. A-[illegible] J. J. Welder, D.L.&C. Survey, 1,634 [illegible] to southeast lines, 736 feet to southwest lines is drilling at 270 feet.

Webb County

O. W. Killam's No. 7 Bruni, Survey [illegible] Block 4, Cole Field, is moving on, location to be announced later.

Humble Field—Duval

Humble Oil & Refining Co.'s No. 14 Kohler, Survey 396, located 495 feet north and east line, is drilling at 1,44[illegible] feet; No. 15 Kohler, Survey 401, located 825 feet east line, 165 feet north line, has derrick up; No. 16 Kohler, Survey 114, location 165 feet south and west lines; No. 17 Kohler, Survey 399, located 165 feet north and west lines, has set 10-inch casing at 329 feet; No. 18 Kohler, Survey 402, located 165 feet south and east lines, has derrick up; No. 19 Kohler, Survey 424, located 165 feet north and west lines, is drilling at 1,575 feet; No. 20 Kohler, Survey 251, is location 165 feet north line, 2,475 feet east line.

Driscoll Field

Robert Driscoll's No. 15 Driscoll, Survey 448, is rigging up.

Schoolfield-O'Byrne Pool

Magnolia Petroleum Co.'s No. B-5 C. W. Hahl, Survey 61, located 3,681 feet east line, 150 feet south line, in sand at 2,300-37 feet, is making 1,200 bbls. on half-inch choke. S. & O. Oil Co.'s No. 2 Bowe, Survey 250, Block 21, located 220 feet east line, 660 feet south line, is drilling at 2,370 feet, sand at 2,367 feet, testing little oil; No. 2 Hahl, Survey 250, Block 22, is location 220 feet north line, 960 feet west line; No. 3 Hahl, Survey 250, Block 22, is location 220 feet north line, 660 feet west line. Onyx Oil Co.'s No. 4 Krauter, Survey 250, Block 20, located 220 feet south and west line, is drilling at 2,370 feet.

Randado Field—Jim Hogg

Magnolia Petroleum Co.'s No. 41 Merchants State Bank, Survey 155, located 150 feet north and east lines, is drilling at 3,970 feet. Randado Oil Corp.'s No. 35 Palacious, Survey 291, Block 22, located 150 feet south line, 450 feet east line, is moving on.

Henne-Winch & Fariss Pool

A. L. Kitselman's No. 1 Lopez, Survey 255, Block 6, located 289 feet north line, 300 feet west line, is drilling at 1,943 feet; No. 1 Holbien, Survey 3, Share 3, Block 9, located 450 feet north line, 150 feet west line, is drilling at 1,000 feet. The Texas Company's No. 1 D. Vela, Survey 582, Share 4, located 1,300 feet west line, 150 feet south line, is drilling at 1,400 feet.

Schott Field—Webb

Livingston & Payne's No. 1 Guerra-Ochoa, Survey 58, located 917 feet east line, 470 feet south line (location changed), is moving on. Laredo Oil Co.'s No. 14 Killam, Survey 457, has derrick up.

Aviator or Bruni Tracts

Aviator Gas Co.'s No. 2 Bruni, Survey 2,083, located 1,120 feet east line, 1,170 feet south line, is location.

Albercas Field

Sun Oil Co.'s No. A-12 Yeager-Strohman, Share 5, located 4,675 feet north line, 150 feet west line, has sand at 2,153-55 feet standing. Rycade Oil Corp.'s No. 8 Yeager-Strohman, Share 5, located 1,950 feet north line, 150 feet east line, is standing at 2,145 feet.

Carolina-Texas Pool

A. G. Deck's (C. R. Miller-Daniels) No. 1 de la Garza, Survey 48, Block 47, located 150 feet north and east lines, has sand at 2,638 feet, testing. W. R. Shankle's No. 1 Webster, NE SE Survey 684, located 150 feet south and west lines, at 3,038 feet is preparing to set casing, waiting on water. The Texas Company's No. 1 Benavides, NW SE Survey 683, located 150 feet north and west lines, is drilling at 2,690 feet.

Magnolia-Cole Field

Cole Petroleum Co.'s No. 67 Benavides, Survey 412, Block 12, located 313 feet east line, 160 feet north line, is shut down at 38 feet. Houston Oil Co.'s No. D-4 Benavides, Survey 753, Block 13, is location 160 feet south line, 822.5 feet east

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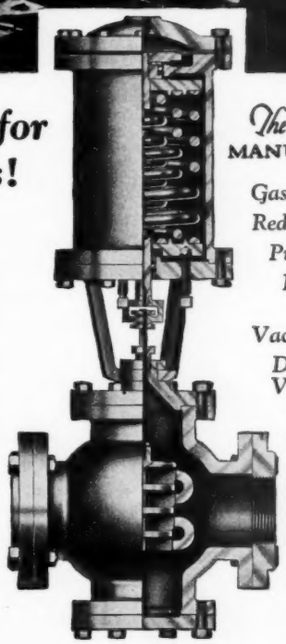

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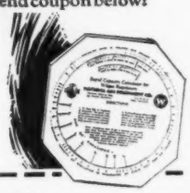

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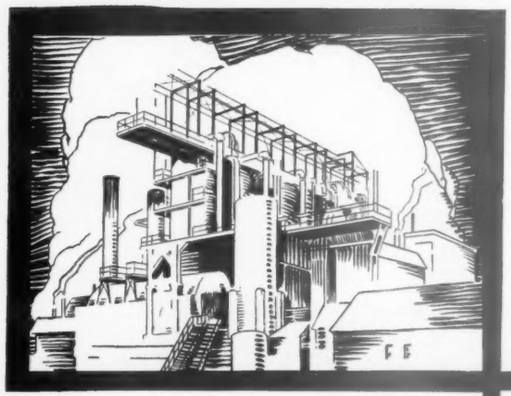

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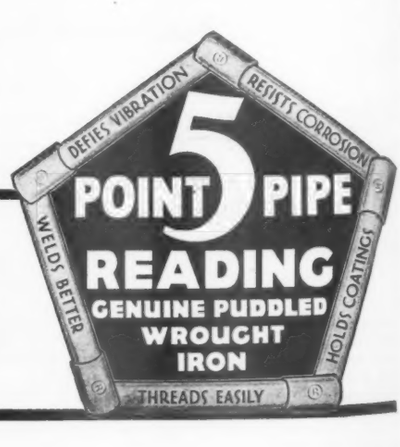

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line; No. D-17 Benavides, Survey 753, Block 5, is location 160 feet south and west lines. Magnolia Petroleum Co.'s No. 1 Benavides, Survey 697, Block 10, located 150 feet north and east lines, is drilling at 40 feet; No. 1 King-Benavides, Survey 694, Block 12, located 150 feet south and east lines, is location; No. 1 J. G. Valdez, Survey 754, Block 15, is location 150 feet south and west lines.

Cole Gas Field

O. W. Killam's No. 4 (1) Bruni, Survey 5, Block 2, located 150 feet northwest and northeast lines, is ready to spud in; No. 6 Bruni, Survey 3, is testing at 2,354 feet. J. G. Mackay's No. 1 Richardson, Survey 5, located 150 feet north and west lines, has sand and tested large gas well and has set casing at 1,768 feet. W. F. Morgan's No. A-1 King-Harper, Survey 323, located 2,255 feet southeast lines, 2,810 feet east lines of Survey 319, has sand at 1,751-66 feet and set casing at 1,750 feet.

Jennings Field—Zapata

O. W. Killam's No. 12 Cuellar, Cerrito Blanco grant, 1,215 feet southwest lines, 1,170 feet southeast lines, is rigging up; No. 3 Hinnant, Survey 74, located 1,980 feet west line, 1,470 feet south line, has spudded in. Killam-Duggan's No. 4, Cerrito Blanco grant, 1,511 feet northeast lines, 627 feet northwest line, is testing at 1,473 feet. South Texas Production Co.'s No. 4 Jennings, Cerrito Blanco grant, 6,900 feet southeast lines, 8,300 feet southwest lines, is drilling at 1,580 feet after testing gas in sand at 1,415-23 feet.

Somerset Field—Atascosa

W. R. Hamilton's No. 15 R. T. Hughes, J. Sharp Survey No. 518, located 300 feet east of No. 14, is skidding rig over.

Yost Field—Bastrop

Atlantic Oil Producing Co.'s No. 4 Yost, A. Garcia Survey, is rigging up. Sun Oil Co.'s No. 1 E. E. Barnett, L. C. Cunningham Survey, 870 feet southeast lines, 150 feet northeast lines, is in chalk 1,890 feet, topped 1,547 feet, with little serpentine at 1,640 feet.

Somerset Field—Bexar

Schimmel Production Corp.'s No. 1 J. Frees, C.E.P.I.&M. Survey, Block 2, located 250 feet east line, 829 feet south line; No. 2 J. Frees, same survey and block, is location 679 feet north of No. 1.

Dobrowolski Field

F. H. Eckert's No. 3 Dobrowolski, Section 52, Block 4, located 300 feet south of No. 1, is drilling in rock at 300 feet.

Gas Ridge Field

Medio Oil Co.'s No. 9 Cohen, 500 feet southeast of No. 7, is shut down at 470 feet.

Luling Field—Caldwell

United North & South Development Co.'s No. 1 G. G. Gideon, Miles Dykes Survey, 880 feet north line, 320 feet west line, is drilling at 300 feet.

Bruner Field

Tips de Armond's No. 2 Carter, Gerren Hinds Survey, 170 feet west line, 147 feet north line, is drilling at 1,005 feet, showing some gas. Buchana and others' No. 1 Trap Briscoe, P. B. McCearly Survey, 150 feet south and east lines, at 24 feet is waiting on rotary. E. R. Brawn & C. O. Miller's No. 2 R. W. Carter, Gerren Hinds Survey, 150 feet north and west lines, has derrick up. C. E. Sllzey's No. 1 Taylor is standing at 42 feet. Forest Oil Co.'s No. 1 J. H. Fleming, A. Floyd Survey, 150 feet northeast lines, 75 feet southeast lines, at 2,724 feet cored Edwards topped 2,716 feet, only 148 feet of chalk below. Golden West Oil Co.'s No. 3 Malone, A. Floyd Survey, 450 feet northwest and northeast lines, is standing at 1,118 feet; No. B-1 Wilson, A. Floyd Survey, 150 feet north and east lines, had casing part. Gulf Production Co.'s No. 3 W. O. Allen, Gerren Hinds Survey, at 2,551 feet is drilling in Eagleford topped 2,530 feet; No. 4 W. O. Allen, 300 feet east of No. 3, is rigging up; No. 2 Carter, Gerren Hinds Survey, 450 feet east line, 150 feet north line, is drilling at 2,473 feet in Buda with no chalk; No. 3 R. W. Carter, Gerren Hinds Survey, 150 feet south and west lines, is drilling at 2,576 feet in Georgetown with no chalk; No. 5 R. W. Carter, 300 feet south of No. 1, is moving in rig; No. 6 R. W. Carter, Gerren Hinds Survey, 300 feet west of No. 5, has derrick up; No. 7 R. W. Carter, Gerren Hinds Survey, 300 feet east of No. 4, has derrick up; No. 4 J. J. Davis, A. Floyd Survey, 150 feet east line, 350 feet north of No. 2, is in chalk at 2,428 feet; No. 1 M. J. Tiller, Gerren Hinds Survey, 150 feet NE cor., 150 feet north line, is in Edwards 2,727 feet, swabbing; No. 3 M. J. Tiller, Gerren Hinds Survey, 300 feet west of No. 2, is drilling at 2,608 feet in Del Rio topped 2,582 feet; No. 4 M. J. Tiller, Gerren Hinds Survey, 150 feet south line, 275 feet west line, is at 2,705 feet waiting on cement; No. 6 M. J. Tiller, 300 feet east of No. 5, is drilling at 1,820 feet in shale; No. 7 M. J. Tiller, 300 feet east of No. 6, is rigging up; No. 1 J. D. Wright, Gerren Hinds Survey, 450 feet south line, 150 feet west line, is drilling at 2,536 feet; No. 2 J. D. Wright, 300 feet north of No. 1, is drilling at 2,177 feet in Taylor marl; No. 3 J. D. Wright, 150 feet south and west lines, is drilling at 281 feet; No. 4 J. D. Wright, 300 feet north of No. 2, is rigging up; No. 5 J. D. Wright is rigging up. T. C. Hadley's No. 1 Merriweather is drilling at 1,500 feet. Humble Oil & Refining Co.'s No. 1 L. G. Hanson, James Hinds Survey, 450 feet south line, 750 feet east line, is drilling at 2,100 feet in Taylor marl; No. 4 W. O. Allen, Gerren Hinds Survey, 300 feet east of No. 2, is standing at 2,733 feet total depth, 1,400 feet in oil; No. 5 W. O. Allen, Gerren Hinds Survey, 431 feet north line, 760 feet west line, at 2,752 feet has fluid in hole; No. 6 W. O. Allen, Gerren Hinds Survey, 150 feet north line, 868 feet south line, at 2,752 feet is swabbing 2,000 feet of oil in hole; No. 7 W. O. Allen is rigging up; No. 8 W. O. Allen is drilling at 317 feet; No. A-4 Moses & Baggett, 300 feet west of No. 1, has derrick up; No. A-5 Moses & Baggett, Gerren Hinds Survey, 804 feet south line, 150 feet east line, is drilling at 2,495 feet in Buda topped at 2,436 feet; No. 6-A Moses & Baggett, Gerren Hinds Survey, 150 feet east line, 1,158 feet south line, is location; No. A-7 Moses & Baggett is rigging up; No. 1 Floy Gray, James Hinds Survey, 350 feet south and west lines, is in chalk at 2,612 feet; No. B-1 Moses & Baggett, Samuel Shupe Survey, 150 feet south line, 695 feet east line, is in Edwards at 2,672 feet; No. B-2 Moses & Baggett, S. Shupe Survey, 300 feet east of No. 1, has spudded in; No. B-3 Moses & Baggett, S. Shupe Survey, 150 feet east line, 1,050 feet south line, has derrick up; No. B-4 Moses & Baggett, has derrick up; No. A-2 J. R. Tiller, 300 feet north of A-1, has derrick up; No. B-2 J. R. Tiller has derrick up; No. 6 J. B. Tiller, Gerren Hinds Survey, 150 feet north line, 750 feet west line, at 2,753 feet in Edwards is bailing; No. 7 J. B. Tiller, Gerren Hinds Survey, 450 feet west line, 150 feet south line, is drilling at 2,560 feet in Buda; No. A-1 J. R. Miller, James Hinds Survey, 150 feet west line, 1,050 feet south line, has derrick up; No. B-1 J. R. Miller has derrick up; No. 1 Wright has derrick up in NW cor. of the lease; No. 4 J. J. Davis, A. Floyd Survey, 300 feet north of No. 2, at 2,700 feet in Edwards shows oil but fails to flow. C. E. Lange's No. 1 Kate Colding, A. Floyd Survey, 150 feet northwest lines, 112 feet northeast lines, at 2,716 feet is waiting on pump. Luling Oil & Gas Co.'s No. G. R. Carter has derrick up 150 feet north and west lines of tract. Rydal Oil Corp.'s No. 1 J. M. Hanson, James Hinds Survey, 150 feet south and east lines, is location. Shell Petroleum Corp.'s No. B-1 Carter, Gerren Hinds Survey, 150 feet south and west lines, is drilling 1,483 feet; No. 5 Malone, A. Floyd Survey, 300 feet east of No. 1, is in shale at 1,375 feet; No. 3 Moses, A. Floyd Survey, 150 feet south line, 450 feet east line, is at 2,706 feet rigging up to pump; No. 1 W. L. Smith is drilling at 60 feet; No. 2 F. Tiller, Gerren Hinds Survey, 450 feet east line, 150 feet north line, at 55 feet is moving in rotary; No. 6 Floyd Tiller, Gerren Hinds Survey, 150 feet south line, 1,050 feet west line, is in Edwards at 2,688 feet, topped 2,686 feet; No. 7 F. Tiller, 300 feet west of No. 5, is drilling at 1,700 feet; No. 8 F. Tiller, Gerren Hinds Survey, 300 feet west of No. 6, is moving in rig. Sun Oil Co.'s No. 5 Malone, A. Floyd Survey, 150 feet southwest lines, 1,486 feet northwest lines, at 2,719 feet in Edwards is going on the pump; No. 6 Malone, 300 feet southeast of No. 4, has derrick up. The Texas Company's No. 1 R. W. Carter, Gerren Hinds Survey, 150 feet south and east lines, is drilling at 1,703 feet; No. 5 Merriweather, A. Floyd Survey, 150 feet northeast and southeast lines, is drilling at 48 feet; No. 6 Merriweather, A. Floyd Survey, 150 feet northwest lines, 70 feet northeast lines, at 2,783 feet total depth is standing oil within 500 feet of the top. Towns & Porter's No. 5 Hickman, Gerren Hinds Survey, 300 feet east of No. 4, is drilling at 375 feet.

Sullivan Field—Gonzales

Empire Gas & Fuel Co.'s No. 1 Riverbed, Winslow Turner Survey, 133 feet north line, 10 feet east line, is drilling at 3,550 feet and running 35 feet high. Indian Petroleum Co.'s No. 1 Karnstadt, Winslow Turner Survey, 450 feet northwest lines, 150 feet northeast lines, is drilling at 4,000 feet.

Luling Field—Guadalupe

A. B. A. Oil Co.'s No. 4 Britton Harris is shut down at 1,250 feet for reparis. Magnolia Petroleum Co.'s No. 9 W. R. Shanklin, H. Cottle Survey, is drilling at 2,030 feet.

Kingsville Field—Kleberg

Humble Oil & Refining Co.'s No. 4 Flato, Section 40, Lot 10, located 250 feet east line, 450 feet north line, is drilling at 5,064 feet.

Agua Dulce Field—Nueces

Agua Dulce Oil & Gas Co.'s No. 1 Otto Wolters, Section 34, Benton's Pasture, is drilling at 1,150 feet. R. & G. Corp.'s No. 1 Brown, George H. Paul Subdivision, Section 87, is location; No. 1 E. W. Perkins, W. W. Wright Survey, 150 feet west line, 1,920 feet south line, is drilling at 1,150 feet; No. 2 Ed Allen, Lot 5, Section 6, about 1,900 feet east of No. 1, has derrick up.

Saxet Field

Saxet Gas Co.'s No. 5 Dunn is location 1,500 feet southwest of No. 1 Dunn, discovery well of field.

Refugio Field—Refugio

Benedum & Trees' No. 4 Claude Heard, 600 feet south of No. 3, is location. Houston Oil Co.'s No. 5 Wilson Heard, 300 feet west of No. 4, is drilling at 2,400 feet. Houston Gulf Gas Co.'s No. 7 Fannie Heard, west offset of No. 1 Nellie Cummins, has spudded in; No. 4 J. M. O'Brien, Survey 4, at 2,420 feet is cleaning out hole; No. 1 Fox is drilling at 3,900 feet; No. 3 Fox, Lot 4, Block 5, is drilling in at 3,600 feet. Mission Drilling Co.'s No. 3 Rogers estate, 1,250 feet west of No. 2, is drilling at 1,500 feet. Oigufer Oil Co.'s No. 1 Ryals, townsite tracts, has spudded in. Refugio Development Co.'s No. 1 City of Refugio, in streets between Blocks 12 and 13, is setting up rig. Pat Rutherford, Inc., No. 1 J. E. Fox heirs, townsite tracts, is rigging up, deal and rig sold to Mission Drilling Co. Saxet Gas Co.'s No. 6 Claude Heard, townsite tracts, 600 feet south of No. 4, is drilling at 1,200 feet.

White Point—San Patricio

Spencer & Rhoades' No. 2 J. M. Bennett, A. S. Taft Survey, 900 feet west line, 400 feet south line, tested dry at 2,290 feet, and is drilling deeper.

SOUTHWEST WILDCATS

(Continued from Page 49)

southeast lines, 220 feet northeast lines, is drilling at 2,150 feet. W. F. Morgan's No. 1 Welder-Woods, Survey 102, located 2,725 feet east line, 75 feet south line, is drilling at 1,625 feet.

Brooks County

American Maracaibo Co.'s No. 1 Dix. Tom Seasons Farm Subdivision, Vargas & El Perdido grant, has been spudded in (location to be announced later).

Starr County

U. S. Oil & Gas Co.'s No. 1 Kelsey, Porcion 76, Block 11, located 1,500 feet north line, 500 feet west line, is drilling at 400 feet. The Texas Company's No. 1 V. C. de Guerra, Porcion 68, Share 92, located 600 feet east line, 6,280 feet south line, is rigging up.

Webb County

G. S. Lumpkin's No. 1 H. Yeager, Porcion 33-34-35, Block 17, located 1,170 feet east line, 150 feet south line, is location. L. W. Nelson's No. 1 Moglia, Survey 672, located 150 feet east line, 2,684 feet south line, has spudded in. Usher Carson's No. 2 D. Benavides, Survey 1,613, Block 11, located 150 feet north and west lines, has spudded in.

Zapata County

National Oil Co.'s No. 1 Don B. Adams, Section 11, Block 4, is rigging up. John Pappas' No. 1 Cuellar, Porcion 33-34, Block 5, located 333 feet northeast lines, 193 feet southeast lines, is drilling at 445 feet.

Atascosa County

Amphion Oil Co.'s No. 1 Sam Schlisser, Farm B, 300 feet northeast lines, 600 feet southeast lines, is drilling at 125 feet.

Bastrop County

Gypsy Producing Co.'s No. 1 Lottman estate, east of Bastrop, is shut down at 2,320 feet. Billy Mayfield's No. 2 McColl, Stephen F. Austin Survey, 50 yards west of No. 1, is drilling at 1,140 feet showing oil and gas in sand and pyrite in Wilcox.

Bexar County

Allen Burnam's No. 1 Ward, A. A. Gardiner Survey, is standing at 1,620 feet, 212 feet in Edwards. J. J. Curl's No. 1 Frank P. Carle, Section 5, located 1,320 feet east line, 660 feet south line, is drilling at 251 feet. Humble Oil & Refining Co.'s No. 2 Oppenheimer, J. M. Urriegas Survey, 300 feet north of No. 1, is drilling at 3,268 feet probably in Glenrose. Indian Creek Oil & Gas Co.'s No. 1 Wolfsohl, Survey 5, located 180 feet CEL, is drilling again at 540 feet. Moore-Jauer's No. 1 Holly R. Ellison, T. York Survey, 2,916 feet east line, 1,500 feet south line, set and cemented casing at 383 feet.

Caldwell County

Russell's No. 1 Hill, McCullough Survey, is standing at 547 feet. M. O. Rayor's No. 1 D. C. Robinett, M. G. Duke Survey, 150 feet northeast and southwest lines, is drilling at 1,000 feet. Whittington and others' No. 1 J. G. Horner, Francis Berry Survey, is drilling in shale at 940 feet.

Calhoun County

B. F. Thompson's No. 1 Thomas, John P. Tully Survey, 910 varas north 5 feet 30 inches west of north corner of John C. Post Survey, is cleaning out at 2,390 feet.

Colorado County

National Oil Co.'s No. 1 H. T. Brandt, Freeman Pettus league, is location 150 feet south line, 1,000 feet west of highway. Shell Petroleum Corp.'s No. 1 Neuendorff, J. Brod Survey, 500 feet east line, 200 feet south line, is drilling at 350 feet.

Edwards County

A. M. Griffith's No. 1 Wardlaw, Section 60, Block VS, located 1,050 feet west line, 150 feet south line, is drilling at 725 feet.

Fayette County

Marshall & Moore's No. 1 John A. Kerr, M. Muldoon league, 250 varas north line of league and little west of center, is shut down at 2,078 feet. National Oil Co.'s No. 1 J. C. Melcher, S. M. Williams league No. 1, located 300 feet north and east lines, is drilling in rock at 2,503 feet with gas showing at 2,480 feet. R. E. Phalon's No. 1 Cervenka, Fayette County School Lands, is drilling at 3,700 feet in series rock, lime rock and gumbo.

Frio County

Pilgrim Oil Co.'s No. 2 Blackaller, James Gouley Survey, is standing at 3,218 feet.

Goliad County

J. E. Alexander's No. 1 A. Frommie, 10 miles north of Goliad, is drilling at 716 feet in lime. Booth McCarson's No. 1 Murray, Survey 3, Block 11, located 200 feet west line, 150 feet south line, is drilling at 1,230 feet.

Gonzales County

Alexander & Smith's No. 1 Billings, G. Gwinn Survey, has derrick up. Joe Bruner's No. 1 Miller, Richard Heath Survey, 3,040 feet north line, 200 feet east line, is drilling at 400 feet. Crown

Petroleum Co.'s No. 1 Hattenbach, James Jones Survey, 900 feet east line, 200 feet south line, is moving in rig. W. D. Flynn's No. 1 Wilhausen, S. Bateman Survey, east central part, is fishing at 5,212 feet.

Guadalupe County

Pat Armstrong is straightening out titles for No. 1 Halm in the Wakefield Survey. G. A. Greene's No. 1 B. B. Dix, Ira Nash Survey, 610 feet north of road, 320 feet east line, is standing at 665 feet. J. J. Christie's No. 1 Taylor Thomas, Gustavus Chotwell Survey, 1,100 feet southwest lines, 1,130 feet southeast lines, is at 1,224 feet in top of Edwards showing oil. Magnolia Petroleum Co.'s No. 1 F. A. Whitley, Samuel Highsmith Survey, 300 feet C NE L, has derrick up. Miller Brothers' No. 1 Gib Springs, E. Cortari Survey, 450 feet west line, 775 feet south line, is drilling at 2,275 feet. Eugene Sights' No. 1 C. Woehler, John King Survey, 310 feet north line, 210 feet east line, is shut down at 1,935 feet. Trinity Driller's No. 1 Baptist Landmark Association. J. H. Kuykendall Survey, townsite of Kingsbury, 150 feet south line, 155 feet west line, is drilling at 1,975 feet in chalk topped at 1,843 feet.

Jackson County

The Texas Company's No. 1 W. C. Moore, I.&G.N. Survey No. 208, located 5,108 feet south line, 150 feet west line, is drilling at 3,322 feet in sand. Wright Brothers' No. 2 Classen has sand at 3,945 feet; No. 8 Drushell has derrick up.

Karnes County

H. E. Hewitt's No. 1 W. E. Porter, 6 miles south of Runge is drilling.

Kerr County

McMan Oil & Gas Co.'s No. 2 Walter Schreiner is location.

Kinney County

Lloyd Oil Co.'s No. 1 G. Bedell Moore estate, Survey 117, located 1,320 feet CNL, is at 985 feet set 15½-inch pipe and shut down. Mardon Oil Co.'s No. 1 Jim Clamp, Survey 346, Section 1,492, at 2,540 feet set casing too low after showing gas and is pulling casing to reset.

Lavaca County

The Texas Company's No. 1 Russek, H. Martin Survey, 150 feet south and west lines, is in lime and shale at 3,299 feet.

Maverick County

Ryan Consolidated Petroleum Co.'s No. 2 Indio ranch, A. Rivas Survey No. 7, is at 1,320 feet. Rycade Oil Corp.'s No. 4 J. M. Chittim, Section 104, Block 7, east central part, has been spudded in; No. 3 Chittim, Section 116, Block 7, at 3,007 feet blew in throwing oil over derrick; No. 4 Sullivan, Section 112, Block 7, east central part, has derrick up.

Medina County

W. M. Allison's (Webster) No. 1 Haeglin Survey 579, located 300 feet CNL, is shut down at 600 feet. California-Medina's No. 1 Rothe, Survey 1,012, is erecting 112-foot derrick and moving in big rotary rig to resume at 3,278 feet. F. M. Cline's No. 1 T. J. Bendele, Survey 593, located 600 feet west line, 150 feet south line, is standing at 815 feet showing some oil. Donaldson Oil Development Co.'s No. 1 Adams Co., Survey 25, located 160 feet east line, 1,227 feet south line, is drilling in top of Edwards at 3,015 feet. Lynch and others' No. 1 Mott is drilling again at 522 feet. Thomas & Ryan's No. 1 Conger, Survey 459, located 200 feet north and east lines, at 1,046 feet is drilling deeper, tested dry, though bottom of core in Anacacho showed considerable oil.

McMullen County

Natt Holman's No. 1 Shiner, Henry M. Brewer Survey, 7,515 feet south of Nueces River, 3,084 feet east line, is drilling at 780 feet.

San Patricio County

J. T. Laprade's No. 1 D. Odem, Herron Survey, 1,400 feet west line, 1,458 feet east line, has derrick up. George B. Pickett's No. 1 Whitworth, NW NW Section 60, is standing at 3,250 feet.

Nueces County

Southern Crude Oil Purchasing Co.'s No. 1 Roy Clift, Section 197, of F. Z. Bishop Subdivision, 450 feet south and east lines, is drilling at 1,800 feet. Pearson and others' No. 1 Bluntzer, Block 3, NW cor., is drilling at 1,600 feet. R. & G. Corp.'s No. 1 Roberts is location north of proven field several miles. No. 1 Ragland has set surface casing at 450 feet. Nueces River Basin Development Co.'s No. 1 Allen, G. Farrier Survey, has resumed drilling at 2,936 feet.

Refugio County

Blanco Creek Oil Co.'s No. 1 St. John, J. Scott Survey, 708 feet northwest lines, 3,074 feet northeast lines, is pulling at 2,600 feet. J. M. Davis & Tom Horn's No. 1 Howard, Section 8, is drilling at 2,945 feet. Magnolia Petroleum Co.'s No. 1 Glenewinkle, J. Scott Survey, 330 feet south and east lines, is at 3,850 feet, no sand at 3,700 feet, cap rock at that depth with gumbo under it. Mission Drilling Co.'s No. 1 Mitchell, at south end of Oak Street in city of Refugio, is at 2,400 feet rigging up to deepen old test that made salt water at 2,400 feet.

Uvalde County

Pure Oil Co.'s No. 2 J. D. Smythe, Survey 687, 1,920 feet south and 265 feet east of No. 1, is drilling at 1,781 feet.

KANSAS FIELDS

(Continued from Page 44)

though the activity of the region is unchecked.

Chautauqua County

Syndicate Oil Corp. is erecting the rig for No. 1 Westerfield, SW cor. NW NE, Section 1-32-8.

Clay County

Skow Brothers and others made location for No. 1 Strut, SW cor. SE, Section 16-9-4.

Coffee County

Spencer & Derby's No. 1 Crandall, NW cor. SW, Section 14-23-15, is drilling at 420 feet. McCulloch Oil Co.'s No. 1 Hutchins, SW cor. SE NW, Section 18-23-16, has been abandoned at 1,490 feet.

Cowley County

Lewis Producing Co. made location for No. 1 Sitton, NE cor. SE NW, Section 30-31-6. Foster and others made location for No. 1 Refinery, NW cor. Section 36-34-3. Tidal Oil Co.'s No. 1 Horton, SE cor. Section 17-35-2, made 3,000,000 feet of gas from sand at 3,281-3,341 feet. The Prairie Oil & Gas Co. is building the rig for No. 1 Mitschler, SW cor. SE SE, Section 9-32-4.

Ellis County

Davis, Hazlett and others' No. 1 Weiland, NE cor. Section 1-13-16w, made 250 bbls. from sand at 3,004-14 feet. Derby Oil Co. and Empire Oil & Refining Co.'s No. 1 Kraus, NW cor. SW SW, Section 17-14-19w, has been abandoned at 3,881 feet.

Greenwood County

Empire Oil & Refining Co. is erecting the rig for No. 12 Edwards, SE cor. NW, Section 21-23-11. Mid-Continent Petroleum Corp.'s No. 3 Geist, NW cor. SW, Section 13-24-12, made 30 bbls. from sand at 1,705-27 feet. Superior Oil Corp.'s No. 5 Bonnett, NW cor. SW NE, Section 13-24-12, is dry and abandoned at 1,793 feet. Peerless Oil & Refining Corp.'s No. 1 Cannon, C NE NW, Section 8-26-13, has been abandoned at 1,600 feet.

Harvey County

Jolly Ogg Petroleum Co. and others made location for No. 1 Horpp, SE cor. NE, Section 22-23-1w. White Eagle Oil & Refining Co. and others' No. 1 Miller, C SE, Section 3-24-1, is dry and abandoned at 3,600 feet.

Kiowa County

Wilcox Oil & Gas Co. and others' moved the rig out for No. 1 Woodward, NE cor. Section 35-27-17w.

McPherson County

McPherson County Oil & Gas Co. has the rig on the ground for No. 1 Rasmussen, SW cor. Section 8-18-3w. Amerada Petroleum Corp.'s No. 1 Roseberg, SW cor. SE NW, Section 31-18-2w, was completed for 200 bbls. in sand at 2,954-97 feet. Gardner Petroleum Co.'s No. 2 Benson, NE cor. SW, Section 32-18-2w, made 310 bbls. from sand at 2,951-86 feet.

Marion County

Tidal Oil Co. is erecting the rig for No. 1 Ewert, NW cor. SW SW, Section 7-19-3. General Utilities Co. made location for No. 1 Siebert, C NW, Section 17-19-3. Location was also made for No. 1 Propp, NE cor. SE SW, Section 8-19-4.

Rooks County

Krueger and others' No. 1 Stites, NW cor. SE SW, Section 12-9-16w, is spudding. Derby Oil Co.'s No. 1 Kruse, NE cor. NW NE, Section 3-10-16w, is rigging up to deepen from 3,167 feet. Phillips Petroleum Co.'s No. 1 Tatkenhorst, NE cor. NW, Section 14-9-16w, was deepened to 3,612 feet and abandoned.

Russell County

The Texas Company made location for No. 1 Jacobs, SW cor. Section 31-12-15w. Location was also staked for No. 1 Leonard, NW cor. Section 6-13-15w. Griffith and others' No. 1 Gorham, NE cor. SE SE, Section 30-13-15w, is dry and abandoned at 3,383 feet. R. E. Day and others' No. 4 Mermas, NE cor. SE NE, Section 32-13-15w, was completed for 60 bbls. in sand at 3,327-29.

Sedgwick County

T. B. Slick and others' rig is up for No. 1 Rosenhagen, SW cor. SE NE, Section 33-27-4w. Bu-Vi-Bar Petroleum Co. and others' No. 4 Wright, SE cor. NE, Section 12-26-1w, Valley Center Pool, is rigging up. Derby Oil Co.'s No. 2 Gorman, NE cor. NW SW, Section 6-26-1, is rigging up. Bu-Vi-Bar Petroleum Co. and others' No. 2 Branch, SE cor. SW SE SW, Section 6-26-1, is rigging up. No. 2 Emerich ,SW cor. SE SW, Section 6-26-1, is a rig. Vickers Petroleum Co. has the rig up for No. 3 Nissen, NW cor. SW NE SW, Section 6-26-1.

Bu-Vi-Bar Petroleum Co. and others' rig is up for No. 4 Shawver, SW cor. NW, Section 7-26-1. No. 5 Shawver, NW cor. NE NW NW, Section 7-26-1, is a cellar. Kroder and others' No. 1 Harden, SW cor. NW SW, Section 20-26-1, is rigging up. Twist and others built the rig for No. 1 Rayburn, NW cor. SW SE, Section 4-25-1w. Meridian Oil Co. has the rig up for No. 1 Perrin, SE cor. Section 25-25-1w. Reynolds & Rogers' No. 1 Updegraff, SE cor. SW SE, Section 26-25-1w, is rigging up. McBride Oil Co.'s No. 1 Black, NE cor. Section 36-25-1w, is rigging up.

Whittaker and others' rig is up for No. 1 Cantrell, SW cor. NE SW NE, Section 36-25-1w. J. R. Robertson and others' No. 1 Stewart, NE cor. NW SW, Section 29-25-1, is a rig under construction. Skelly Oil Co. and others made location for No. 1 Stambach, SW cor. Section 31-25-1. No. 2 Stambach, NW cor. SW SW, Section 31-25-1, is also a location. Blankenship and Washoma Oil Co. made location for No. 1 Tuttle, SW cor. NW, Section 1-27-1. La Fonte and others moved the rig out for No. 1 Carlton, SE cor. SW, Section 24-28-1.

Bu-Vi-Bar Petroleum Co. and others' No. 2 Wright, NE cor. SE, Section 12-26-1w, has been completed for 1,375 bbls. in sand at 3,375-83 feet. No. 3 Lyon, NW cor. SW, Section 7-26-1, made 1,480 bbls. from sand at 3,350-54 feet. Simmons & Canary's No. 1 Hoover, SW cor. SE, Section 9-26-1, is dry and abandoned at 3,671 feet.

Mason & Vanzandt's No. 1 Jones, C NW SW, Section 19-25-1w, is dry and abandoned at 3,504 feet.

Sumner County

Marland Oil Co. made location for No. 1 Curry, NW cor. SW, Section 26-24-2.

OKLAHOMA FIELDS

(Continued from Page 44)

NW, Section 8-17-10, made 50,000,000 feet of gas from sand at 1,987-2,017 feet. Nowata Oil & Refining Co.'s No. 1-A Sethel, SE cor. SW SW, Section 9-16-9, is dry and abandoned at 3,111 feet. Barnsdall Oil Co.'s No. 3 Winn, SW cor. NE SE, Section 28-16-9, has been abandoned at 3,392 feet. Franchot and others' No. 1 Ralston, SW cor. SE NW, Section 16-16-10, made 856 bbls. from sand at 2,894-2,900 feet. Pennock Oil Co.'s No. 20 Clinton, CEL NE SW, Section 15-15-10, is dry and abandoned at 3,551 feet. McCulloch Oil Co.'s No. 2 Venci, SW cor. NW NE, Section 31-14-9, has been abandoned at 3,849 feet.

Grady County

Oklahoma Public Utilities Corp.'s No. 4 Dryden, NW cor. SE NE SE, Section 35-5-8w, has been completed for 51,000,000 feet of gas in sand at 2,200-2,4[illegible] feet. Clark & Cowden's No. 3 Freed, [illegible] SW SW, Section 23-5-7w, made 4,000,000 feet of gas in sand at 1,933-52 fe[illegible]

Garvin County

W. R. Ramsey's No. 1 Malickey, [illegible] SW NE, Section 32-1-3, is dry and aba[illegible] doned at 1,344 feet.

Greer County

Indian Territory Illuminating Oil C[illegible] and others made location for No. 1 fe[illegible] C NE, Section 17-6-24w.

Jefferson County

Howard McCaslin made location fo[illegible] No. 1 Bohamon, NW cor. Section 9-6-6w. Simms Petroleum Co.'s No. 1 Peniston, SW cor. SE NE SW, Section 17-7s-5w, has been abandoned at 1,117 feet.

Kiowa County

S. B. Cloys staked location for No. 1 James, NW cor. NE, Section 33-7-17w. Stahl & Burris' No. 1 Ditmar, NW cor. SE SE, Section 18-6-16w, is fishing at 265 feet. J. E. Bickett's No. 1 Ditmar NW cor. SE, Section 19-6-16w, is drilling at 175 feet. Head & Amphlett's No. 1 Prough, SE cor. SW SW, Section 29-6-16w, is drilling at 420 feet.

David Malernee's No. 1 Van Kirkland, NW cor. Section 35-7-15w, has been abandoned at 860 feet. Ridgeway and others' No. 1 Lynn, CWL SW SE, Section 7-6-16w, is dry and abandoned at 602 feet. J. R. Travis' No. 1-A Hobbs, SE cor. SW NW SW, Section 7-6-16w, has been abandoned at 576 feet. Ben S. Brown's No. 1 Ditmar, NE cor. NW NW NE, Section 19-6-16w, is dry and abandoned at 602 feet.

Le Flore County

George F. Collins' No. 1 Kraemer, NW cor. SE, Section 7-7-26, was completed for 750,000 feet of gas in sand at 1,555-95 feet.

Lincoln County

Carter Oil Co. and Shaffer Oil & Refining Co.'s No. 1 McBride, SW cor. NE, Section 31-17-5, is dry and abandoned at 4,370 feet.

Muskogee County

Mack Drilling Co.'s No. 2 Friday, CEL SE NE, Section 7-15-15, is spudding. R. B. Rose moved a machine to the location for No. 10 Howard, CEL NE NE, Section 30-15-16. J. L. Powell and others' No. 1 Smith, CSL SW NW, Section 13-14-18, is drilling at 150 feet. Bement Oil Co.'s No. 5 Flowers, CWL SW NE, Section 5-13-16, is rigging.

C. F. Davis' No. 1 Morris, NE cor. NW SW, Section 20-15-15, is dry and abandoned at 1,626 feet. P. Boyle and others' No. 1-A Russell, CNL NE SE, Section 19-15-16, made 18 bbls. from sand at 1,218-26 feet. W. J. Metzger's No. 7 Francis, CEL SW SW, Section 1-14-18, is dry and abandoned at 986 feet. C. D. Bradley's No. 1 Drake, SW cor. NW SE, Section 12-14-18, has been abandoned at 1,550 feet. Decius & Garrett's No. 1-A Collins, NW cor. SW NE, Section 18-14-18, made 21 bbls. in sand at 1,650-67 feet. Sioux Oil Co.'s No. 1 Brown, NW cor. NE NE, Section 19-13-19, has been abandoned at 908 feet.

Okfuskee County

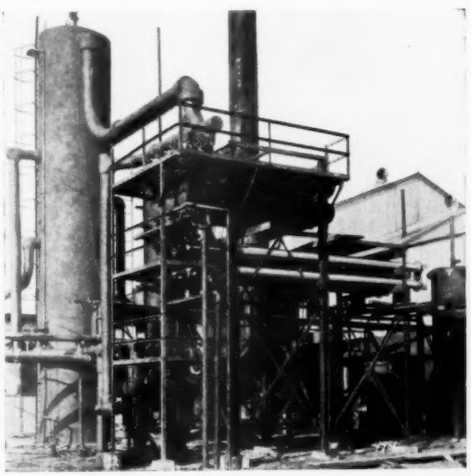
Barnsdall Oil Co. has the rig up for No. 1 Soweka, NE cor. SW, Section 29-12-7. Betty Ann Oil Co. moved the rig to the location for No. 1 Harjo, NW cor. SE, Section 5-12-11. W. R. Ramsey made location for No. 2 Severs, SE cor. NW NE, Section 36-11-9. J. K. Leard staked the location for No. 1 Jimboy, NE cor. SW, Section 12-11-10. Champlin Oil & Refining Co.'s No. 12 Lewis, SW cor. SE, Section 15-11-11, is rigging up. Kingwood Oil Co. and F. D. Misner's No. 1 Lowe, C E half SW SE, Section 16-10-11, is a rig on the ground.

W. R. Ramsey's No. 1 Severs, C NE NE, Section 36-11-9, is dry and abandoned at 3,330 feet. Kingwood Oil Co. and others' No. 2 Brown, CNL NE SW, Section 2-10-11, was completed for 25 bbls. in sand at 1,727-44 feet. No. 1 Robinson, SW cor. NW, Section 12-10-11, is dry and abandoned at 2,026 feet.

Okmulgee County

Kirkland & Son's No. 1-A S. Green, NE cor. SE, Section 24-15-12, is a rig. No. 1-A Prince, NE cor. NW NW, Section 20-15-13, is spudding. No. 1-A Nelson, SE cor. NE, Section 24-15-12, made

REFINERY
HEAT EXCHANGE EQUIPMENT



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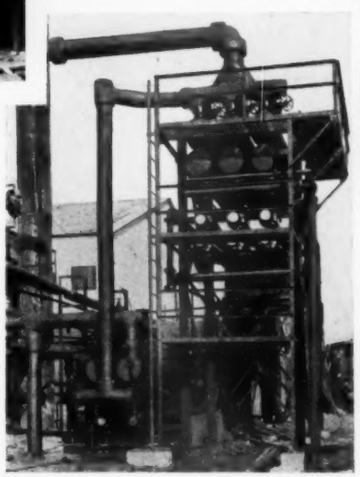

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a 10-bbl. well in sand at 1,509-84 feet. F. Hyer's No. 1 Howard, NE cor. SE SE, Section 17-15-14, has been abandoned at 2,398 feet. Tiger Mountain Oil Co.'s No. 2 Tucker, CNL NE SE, Section 2-13-14, is dry and abandoned at 2,550 feet.

Aiken Oil Co. and others' No. 9 Fox, NW cor. NE SE NW, Section 22-13-14, was deepened to 2,490 feet and plugged back to 2,479 feet and completed for 24 bbls. The Prairie Oil & Gas Co.'s No. 15 Hopping & Kennedy, NW cor. SW NE, Section 22-13-14, is dry and abandoned at 2,494 feet. No. 8 Hopping & Kennedy, SW cor. NW NE, Section 22-13-14, has been abandoned at 2,486 feet in top of Wilcox sand.

Stephens County

Coline Oil Co.'s No. 2 Speers "B," NW cor. NE SW, Section 32-1-8w, is preparing to deepen from 2,176 feet. Fossett and others' No. 3 Adams, SW cor. NW NW SW, Section 19-1s-8w, is rigging up. Magnolia Petroleum Co. has material for the rig on the location for No. 1 Sims, SE cor. SW SE, Section 2-1s-4w. Pace and others' No. 1 Cooper, CWL SW NE, Section 16-2s-7w, is rigging up.

Fossett and others' No. 1 Smith, SE cor. SW, Section 23-1s-9w, has been abandoned at 2,515 feet. Twin State Oil Co.'s No. 2 Cole, SE cor. NE NE, Section 14-1s-4w, made 135 bbls. from sands at 2,913-3,123 feet. Shasta Oil Co.'s No. 3 Chambers, NW cor. SW SE NW, Section 2-2s-10w, is pumping 30 bbls. from sand at 2,166-77 feet.

Seminole Production

Production by leases in various pools of the Greater Seminole area for March 14 was as follows:

Little River Pool

Company, farm—	Location	Wells	Prod.
Amerada:			
Nitey	2- 7-6	3	590
Amerada-Wilcox:			
Fore	35- 8-6	2	445
Barnsdall:			
Cotcha	23- 7-6	2	840
Hotulke	22- 7-6	3	300
Walker	4- 7-6	1	523
Blackwell:			
Baker	11- 7-6	4	1,790
Nitey	35- 8-6	5	1,288
Talley	14- 7-6	4	805
Bryan & Emery:			
Walker	4- 7-6	1	13
Carter:			
Cotcha, M.	23- 7-6	3	120
Cudjo, L.	23- 7-6	2	140
Fish	36- 8-6	4	715
Harjo, C.	11- 7-6	2	2,665
Harjo, M.	13- 7-6	4	1,672
Jackson	11- 7-6	4	1,300
Larney	24- 7-6	4	2,140
Lena	10- 7-6	1	1,005
Moore	11- 7-6	2	350
Tewee	14- 7-6	6	1,265
Thomas	11- 7-6	1	520
Wilson	12- 7-6	1	365
Champlin:			
Tewee	14- 7-6	2	1,100
Continental:			
Cosar	36- 8-6	7	1,540
Cosar, M.	25- 8-6	1	497
Continental & Fisher:			
Milsey	11- 7-6	2	673
Empire:			
Charty	24- 7-6	1	....
Coker	13- 7-6	2	1,062
Sandlin	3- 7-6	1	10
Gypsy:			
Brown, C.	33- 8-6	2	472
Brown, M.	33- 8-6	1	450
Campbell	33- 7-6	2	5
Conard	22- 7-6	2	567
Cosar, W.	36- 8-6	2	105
Cotcha	23- 7-6	6	1,755
Denmark	11- 7-6	4	1,555
Hulhoke	14- 7-6	10	1,267
Mungee	1- 7-6	..	....
Payne	5- 7-7	1	7
Pottie	35- 8-6	4	630
Renton	11- 7-6	3	392
Carpenter	27- 7-6	1	952
Independent:			
Davis, R.	13- 7-6	4	2,325
Tewee	14- 7-6	6	1,810
Williams	15- 7-6	1	370
Independent & Highway:			
Harris	23- 7-6	8	2,159
Independent & White Eagle:			
Davis	2- 7-6	4	140
I. T. I. O.:			
Campbell	1- 7-6	1	143
Dungan	35- 8-6	3	420
House, M. A.	1- 7-6	1	36
House, W. E.	1- 7-6	1	11
House "B"	2- 7-6	4	952
Hull	26- 8-6	3	204
Jackson	1- 7-6	3	280
McCulla	1- 7-6	3	112
Nitey	2- 7-6	6	162
Phoebe "A"	36- 8-6	2	54
Phoebe "B"	36- 8-6	3	49
Reed	1- 7-6	1	5
Soketheche	1- 7-6	3	473
Magnolia:			
Cruse	2- 7-6	4	225
Denby	11- 7-6	4	44
Harjo, A.	14- 7-6	2	127
Harjo, B.	14- 7-6	2	225
Pottie	35- 8-6	4	88
Reed, E.	31- 8-7	1	30
Reed, I.	22- 7-6	3	705
Marland & Shaffer:			
Harrison	4- 7-7	1	410
McCulloch & Sands:			
Harrison	4- 7-6	1	7
Mid-Continent:			
Brunner	11- 7-6	4	335
Eleck	23- 7-6	1	85
Smith	5- 7-7	3	3,155
Wadsworth	36- 8-6	7	350
W. B. Pine:			
Hoyecha	26- 8-6	6	1,763
Pine-Phillips:			
Pottie	35- 8-6	1	430
Prairie:			
Chilcoat	25- 8-6	3	650
Dungan	35- 8-6	1	5
Gibson	14- 7-6	5	1,250
Harris	14- 7-6	4	920
House	2- 7-6	4	280
Johnson	24- 7-6	1	630
Lustey	5- 7-7	2	40
Moppin	24- 7-6	2	1,545
Talley	14- 7-6	4	995
Prairie & Amerada:			
Sunny	14- 7-6	6	2,695
Pure:			
Brinson	24- 7-6	2	708
Cotcha	14- 7-6	10	2,747
Harjo	11- 7-6	4	1,170
Hollins	11- 7-6	1	306
Reiter-Foster:			
Bunyard	14- 7-6	4	1,010
Jefferson	31- 7-6	1	30
Shaffer:			
Narcome	36- 8-6	2	240
Shell:			
Caesar	11- 7-6	1	51
Glass	26- 7-6	1	15
Hotulke	23- 7-6	4	473
Jeffries	32- 8-7	2	....
Johnson	13- 7-6	4	2,985
Sinclair:			
Blanton	11- 7-6	1	....
Cosar	30- 8-6	3	1,105
Haney	12- 7-6	1	95
Tewee	14- 7-6	2	1,330
Sinclair & Kingwood:			
Pompey	24- 7-6	1	75
Skelly:			
Carl	14- 7-6	2	319
Slick:			
Reed	13- 7-6	2	1,277
Williams	15- 7-6	2	682
Wood	26- 7-6	..	1,345
Slick & Pine:			
Coker	1- 7-6	1	1,112
Snowden-McSweeney:			
Tiger	13- 7-6	2	527
Superior:			
Potulka	31- 8-6	1	....
Soketheche	1- 7-6	1	5
Texas:			
Brooks	25- 8-6	1	25
Coker	1- 7-6	3	185
Janey	11- 7-6	6	1,280
Texas & Independent:			
Hotulke	23- 7-6	4	1,890
Hotulke	22- 7-6	1	....
Tidal:			
House	1- 7-6	2	375
Johnson	1- 7-6	1	32
Twin States:			
Lowe	25- 8-6	1	....
Total		324	78,998

Maud Pool

Amerada:			
Ballard	1- 8-4	1	525
Gravel	1- 8-4	1	35
Gossland	8- 8-5	3	330
Hallum	1- 8-4	4	5,870
Amerada & Barnsdall:			
Wallace	17- 8-5	1	240
Amerada & Hull:			
Green	20- 8-5	1	335
Darby:			
Ketcham	19- 8-5	1	59
Gypsy:			
Bourassa	7- 8-5	3	137
Miller	18- 8-5	5	2,922
Independent:			
Harding	18- 8-5	5	2,365
I. T. I. O.:			
State	16- 8-5	1	....
Laurel O. & G.:			
Billington	18- 8-5	2	1,250
Magnolia:			
Billington	8- 8-5	1	232
Marland & Shell:			
Everett	18- 8-5	1	983
Phillips:			
Keenan	6- 8-5	1	....
Wallace	17- 8-5	1	285
Phillips et al:			
Hudson	19- 8-5	3	600
Prairie:			
Campbell	18- 8-5	6	1,400
Pure:			
Lindly	18- 8-5	5	515
Urbansky	19- 8-5	1	301
Wiley	8- 8-5	4	1,283
Sinclair:			
Bellars	19- 8-5	8	1,502
Calvin	7- 8-5	1	720
Harjo	11- 8-5	2	1,044
Lewis	6- 8-5	3	....
Skelly & Margay:			
Lingenfelt	18- 8-5	3	940
Texas:			
Calvin	7- 8-5	4	460
Tidal:			
Dunn	12- 8-4	1	90
Everett	18- 8-5	1	135
Smith	8- 8-5	1	260
Twin States:			
Calvin	7- 8-5	2	305
Wilcox:			
Smith	8- 8-5	2	668
Total		102	35,263

Mission Pool

Amerada:			
Rice	5- 8-6	1	....
Barnsdall:			
Coker	11- 8-5	5	4,018
Fife	14- 8-5	3	600
Carter:			
Fuswa	18- 8-6	2	490
Melisse	9- 8-6	1	555
Micco	8- 8-6	2	395
Darby:			
Judy	1- 8-5	1	85
Empire:			
Cluck	11- 8-5	1	1,483
Gypsy:			
Barkus, N.	6- 8-6	6	4,182
Dosar	7- 8-6	3	1,710
Hardy	7- 8-6	4	600
Harjoche	7- 8-6	3	593
Micco, L.	8- 8-6	2	105
Micco, S.	8- 8-6	1	12
Mission	5 & 6- 8-6	5	3,465
Mosar	1- 8-5	3	930
Independent:			
Lawson	1- 8-5	2	1,765
Independent & Kistler:			
Payne	7- 8-6	2	570
Marland:			
Maines	7- 8-6	2	1,521
McMahon et al:			
Harjo	7- 8-6	1	755
Mid-Kansas:			
Moore	7- 8-6	1	110
Minnehoma:			
Neal	7- 8-6	2	762
Pine:			
Harjo	6- 8-6	1	817
Micco	8- 8-6	1	25
Prairie:			
Melton	6- 8-6	2	1,800
Micco	5- 8-6	1	....
Townsend	6- 8-6	1	85
Prairie & Gypsy:			
Owens	18- 8-6	1	195
Shaffer:			
Weaver	12- 8-5	1	145
Shell & Marland:			
Herndon	7- 8-6	1	277
Shell & Papoose:			
Maines	7- 8-6	3	1,384
Sinclair:			
Hardy	7- 8-6	3	939
Sinclair & Lenox:			
Judy	1- 8-5	1	197
Slick:			
Crain	7- 8-6	1	495
Tidal:			
Nelly	12- 8-5	2	935
Twin States:			
Hayes	8- 8-6	2	820
Judy	6- 8-6	2	1,830
Ripley	12- 8-5	1	100
Total		74	28,664

Bowlegs Pool

Amerada:			
Roscoe	15- 8-6	7	905
Atlantic:			
Baker	10- 8-6	4	555
Fleet	23- 8-6	3	190
Grayson	13- 8-6	4	575
Jones, A.	16- 8-6	2	60
Jones, C.	9- 8-6	1	130
Barnsdall:			
McNac	28- 8-6	1	22
Murrow	11- 8-6	4	335
Carter Oil:			
Bowlegs	15- 8-6	4	465
Burden	23- 8-6	2	162
Harjoche	14- 8-6	6	500
Hilly	23- 8-6	3	160
Jones	11- 8-6	4	382
Walker	15- 8-6	4	315
Wise	23- 8-6	11	1,197
Dixie:			
Culley	11- 8-6	1	68
Empire:			
Lacy	14- 8-6	6	345
Wise	23- 8-6	2	134
Gypsy:			
Bowlegs	22- 8-6	1	32
Bradley	9- 8-6	1	2
Cumsey	10- 8-6	4	507
Grayson	13- 8-6	4	322
Harjoche	10- 8-6	3	432
Jones	11- 8-6	1	5
Walker	15- 8-6	7	500
Wise	23- 8-6	2	165
I. T. I. O.:			
Barnett	24- 8-6	2	205
Barnett "B"	23- 8-6	1	....
Billington	22- 8-6	4	97
Bowlegs	22- 8-6	9	1,103
Davis	13- 8-6	4	307
Fay	13- 8-6	9	850
Goforth	15- 8-6	12	1,199
Livingstone	15- 8-6	10	1,146
Lizzie	13- 8-6	3	185
Walker	15- 8-6	8	909
Williams	12- 8-6	1	172
Wilmott	15- 8-6	4	129
Work	24- 8-6	1	....
Youngblood	24- 8-6	2	97
Magnolia:			
Davis	13- 8-6	2	377
Davis, M.	13- 8-6	1	100
Hammond	10- 8-6	8	635
Rhodos	12- 8-6	5	416
Van Buskirk	9- 8-6	3	700
McCulloch:			
Bowlegs	22- 8-6	1	175
Mid-Continent:			
Baker	10- 8-6	4	347
Smith	12- 8-6	6	435
Minnehoma:			
Bowlegs	15- 8-6	3	183
Prairie:			
Gahagan	23- 8-6	3	410
Harber	10- 8-6	8	1,350
Jones	11- 8-6	4	325
Templeton	12- 8-6	5	1,995
Whitney	23- 8-6	4	480
Pure Oil:			
Reed	14- 8-6	14	1,745
Strother "D" 11 & 14- 8-6		4	362
Strother "F"	10- 8-6	7	2,221
Roxana:			
Taylor	16- 8-6	5	65
Shaffer:			
Lacy	14- 8-6	3	....
Sinclair:			
Cumsey	10- 8-6	4	765
Ellen	11- 8-6	6	684
Harjo	14- 8-6	3	787
Jones	9- 8-6	7	370
Taylor	10- 8-6	4	625
Taylor, W.	10- 8-6	3	609
Walker	22- 8-6	4	925
Slick:			
Jones	3- 8-6	1	[illegible]
Texas:			
Reed	14- 8-6	11	[illegible]
Tidal:			
Grayson	13- 8-6	4	[illegible]
Harjoche	10- 8-6	6	[illegible]
Total		306	[illegible]

Earlsboro Pool

Amerada:			
Anderson	15- 9-5	2	[illegible]
Cowden	4- 9-5	7	[illegible]
Rogers	3- 9-5	2	[illegible]
Atlantic & Gypsy:			
Delaware	13- 9-4	1	[illegible]
Atlantic & Sinclair:			
Foreman	18- 9-5	1	[illegible]
Barnsdall:			
Brown	10- 9-5	4	[illegible]
Bruner, F.	2- 9-5	2	[illegible]
Bruner, N.	10- 9-5	3	[illegible]
Cudjo	14- 9-5	1	[illegible]
Davis, D.	11- 9-5	3	[illegible]
Davis, J.	11- 9-5	4	[illegible]
Davis, M.	11- 9-5	2	[illegible]
Gibson	9- 9-5	7	[illegible]
Hern	15- 9-5	1	[illegible]
Ingram	1- 9-5	8	[illegible]
Pack, S.	10- 9-5	4	[illegible]
Peter	10- 9-5	4	[illegible]
Sango	1- 9-5	3	[illegible]
Sebalka	15- 9-5	1	[illegible]
Sullivan, H.	11- 9-5	1	[illegible]
Suli-Harjo	10- 9-5	2	[illegible]
Wasutke	12- 9-5	3	[illegible]
Burke-Greis:			
Wisner	6- 9-6	2	[illegible]
Burke & Red Bank:			
Mays	1- 9-5	1	[illegible]
Carter:			
Davis	13- 9-5	2	[illegible]
James	6- 9-6	5	[illegible]
Gilliam	13- 9-5	2	[illegible]
Continental:			
Kays	2- 9-5	2	[illegible]
Spencer	12- 9-5	4	[illegible]
Empire:			
Barker	12- 9-5	1	[illegible]
Edmondson	3- 9-5	3	[illegible]
Empire & Amerada:			
Bullock	8- 9-5	1	[illegible]
Empire & Marland:			
Anderson	13- 9-5	1	[illegible]
Gypsy:			
Bruner	10- 9-5	4	[illegible]
Carter, B.	11- 9-5	7	[illegible]
Earl	16- 9-5	1	[illegible]
Hunick	5- 9-5	2	[illegible]
Noble	12- 9-5	4	[illegible]
Peter	10- 9-5	1	[illegible]
Sango	1- 9-5	13	[illegible]
State	16- 9-5	3	[illegible]
Independent:			
Bruner	10- 9-5	3	[illegible]
Sullivan	10- 9-5	1	[illegible]
Knapp	8- 9-5	4	[illegible]
Independent-Margay:			
Gains	11- 9-5	3	[illegible]
Magnolia:			
Bryant	9- 9-5	6	[illegible]
Cowden	4- 9-5	2	[illegible]
Dixon	12- 9-5	1	[illegible]
Edmondson	3- 9-5	1	[illegible]
Germany	30- 9-5	1	[illegible]
Gilliam	13- 9-5	2	[illegible]
Holmsley	11- 9-5	6	[illegible]
Hyde	13- 9-5	1	[illegible]
Ingram	10- 9-5	1	[illegible]
Lena	10- 9-5	3	[illegible]
Moore	24- 9-5	1	[illegible]
Seay	12- 9-5	9	[illegible]
Simpson	10- 9-5	4	[illegible]
Sparks	11- 9-5	6	[illegible]
Sullivan	12- 9-5	3	[illegible]
Mid-Continent:			
McCumber	9- 9-5	7	[illegible]
Rogers	5- 9-5	2	[illegible]
Mid-Kansas:			
Anderson	14- 9-5	2	[illegible]
Phillips:			
Dunaway	14- 9-5	1	[illegible]
Prairie:			
Baker	24- 9-5	2	[illegible]
Davis	13- 9-5	3	[illegible]
Graham, C.	3- 9-5	2	[illegible]
Graham, O.	10- 9-5	4	[illegible]
Stidham	11- 9-5	9	[illegible]
Prairie & Whitney:			
Harjo	24- 9-5	1	[illegible]
Roxana:			
Bayless	17- 9-5	1	[illegible]
Hearn	13- 9-5	1	[illegible]
Spencer	12- 9-5	3	[illegible]
Shaffer:			
Clark	1- 9-5	3	[illegible]
McCoy	36-10-5	1	[illegible]
Sinclair:			
Foreman	18- 9-5	1	[illegible]
Hollins	12- 9-5	1	[illegible]
Sango	2- 9-5	4	[illegible]
Skelly:			
Mays	1- 9-5	2	[illegible]
Shepard	6- 9-6	1	[illegible]
Spencer	12- 9-5	1	[illegible]
Skelly & Atlantic:			
Cherry	6- 9-6	2	[illegible]
Lottie	6- 9-6	1	[illegible]
Slick:			
James	6- 9-6	1	[illegible]
Slick et al:			
Campbell	6- 9-6	3	[illegible]
Superior:			
Ingram	1- 9-5	1	[illegible]
Walker	2- 9-5	3	[illegible]
Texas:			
Anderson	2- 9-5	8	[illegible]
Brown	10- 9-5	8	[illegible]
James	6- 9-6	2	[illegible]
Rogers	5- 9-5	5	[illegible]
Wilmott	10- 9-5	7	[illegible]
Tidal:			
Walker	35-10-5	1	[illegible]
Watkins	9- 9-5	7	[illegible]
Twin States:			
Barker	12- 9-5	3	[illegible]
Hern	2- 9-5	4	[illegible]
Total		286	[illegible]

NATIONAL TRANSIT
Pump & Machine Co.,
Oil City, Pa.

DISTRICT OFFICES
Pittsburgh Los Angeles
Cleveland Tulsa
Houston

During the year 1928, stocks of fuel oil and gas oil in storage increased over 7,000,000 barrels The coming seasonal decrease in demand for these oils with a corresponding increase in the surplus will necessitate increased storage facilities, requiring constantly increasing investment and heavier carrying charges

The refiner operating the Dubbs Cracking Process by

the non-residuum method has no such problem, unless he wishes to store future dividends in steel tanks

And the dividends are available in a steady stream because of his Dubbs Process with its large yields of premium anti-knock gasoline

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

MEN KNOWN IN OILDOM

T. H. Barton

T. H. Barton, who resigned as vice president and director of the Arkansas Natural Gas Corporation recently to become president of the Lion Oil Refining Company, was one of the first men to reach El Dorado, Ark., following the opening of the field in 1921.

Completion of the Busey well scarcely had been reported when he arrived there from Dallas, Tex., and with associates organized the El Dorado Natural Gas Company, which furnished fuel to the hundreds of rigs that soon were drilling and which later became the Natural Gas & Petroleum Corporation. In 1925 he sold a two-thirds interest in this company to the Cities Service Company and it became the Natural Gas & Fuel Corporation with him as vice president and general manager. When the Doherty-Benedum & Trees merger was accomplished in April, 1928, materializing as the Arkansas Natural Gas Corporation, Mr. Barton remained with it as a vice president and director, and while resigning the vice presidency he will remain as a director.

During his 10 years in El Dorado, Mr. Barton has had opportunity to become intimately acquainted with the operations of the Lion Oil Refining Company from its inception. He has watched its growth and success ever since, eventually becoming largely financially interested in it.

The remainder of his biography, Mr. Barton disposed of with, "It is most uninteresting." When he was asked for more detail the conversation ran something like this:

"Born, where and when, Mr. Barton?"

"That doesn't matter."

"Educated at what schools?"

"Neither does that."

"When, where, how and why did you first get into the oil and gas business?"

"I'm a timid man. Don't ask too many questions." But there was a twinkle in his eye.

PERSONAL PARAGRAPHS

O. J. Connell, oil producer of Eldorado, Kans., was in Tulsa for a brief visit last week.

* * *

William Neerman, of Alton, Ill., is in Calgary in connection with his Turner Valley oil interests.

* * *

F. H. Wickett, of the American-Maracaibo Oil Company, is enjoying a rest in Shreveport, La.

* * *

E. M. Skeehan, of Tulsa, auditor of the Barnsdall Corporation, is in California on a business trip for his company.

Clyde Boggs, president of the Kanotex Refining Company, of Arkansas City, Kans., was a Tulsa visitor last week.

* * *

John (Jack) McKeon, independent operator, of Los Angeles, Calif., has returned from a business trip to New York.

* * *

C. W. (Cyclone) Smith, of the Borden Company's sales force, is convalescing after a sinus operation in a Tulsa hospital.

* * *

W. H. Keffer, Winchester, Ky., connected with the Cumberland Pipe Line Company, visited Pittsburgh, Pa., recently.

* * *

A. L. West, for the past 10 years a member of The Texas Company's land department in Oklahoma, has resigned.

* * *

Hal F. Gruber, sales manager of the Union Wire Rope Company, is back at his headquarters at Tulsa after a trip to St. Louis.

* * *

Frank A. Morgan, consulting geologist, Los Angeles, Calif., has been appointed chief geologist of the Rio Grande Oil Company.

* * *

Lee Wilson, Wichita Falls, Tex., operator, has returned from a 10-day business trip to Shreveport and other points in Louisiana.

* * *

Charles Mabrey, of San Angelo, Tex., and H. H. Lee of Houston, Tex., are looking over the various fields in the Wichita Falls district.

* * *

Carl Lumkin, manager of the land office of the Marland Oil Company in Tulsa has resigned, effective April 1.

* * *

H. Foster Bain, secretary, American Institute of Mining and Metallurgical Engineers, has returned from a brief trip to the West Indies.

* * *

Graham Johnson, scout for the Transcontinental Oil Company, at Shreveport, La., is being congratulated on the arrival of Graham, Jr.

* * *

Sheldon Hardin, president of the Southern Crude Oil Purchasing Company, of Fort Worth, Tex., spent a few days at his old haunts in Shreveport, La.

* * *

L. E. Thomas, president of the Reading Iron Company, has returned to Reading, Pa., after a two weeks' business trip to the Texas and Oklahoma oil country.

* * *

Frank W. Branigar, formerly an oil producer of Okmulgee, Okla., but now a resident of Chicago, Ill., visited his friends in Tulsa for a few days last week.

* * *

J. P. Gillan, vice president of Deepwater Refineries, Inc., Houston, Tex., attended the sessions of the Western Petroleum Refiners Association at St. Louis, Mo.

* * *

M. A. Tracey, of the tax and insurance department of the Louisiana Oil & Refining Company, Shreveport, La., was in Houston, Tex., several days on business.

* * *

Ward Blodgett, chief geologist of the Chanslor-Canfield Midway Oil Company, with offices in Los Angeles, Calif., has spent the past several weeks in Honolulu.

* * *

George Blardone, now of Houston, Tex., and formerly of Tampico, Mexico, has been appointed manager of the publicity department of the United Gas Company (Moody-Seagraves), Houston, Tex.

* * *

R. R. Brandenthaler, petroleum engineer at the United States Bureau of Mines experimental station at Bartlesville, Okla., is home after three weeks spent in New York and Washington, D. C.

* * *

Dr. James Paterson, of Sarnia, Ontario, has left via New York for Colombia where he will practice at an International Petroleum Company hospital. While on six months' leave of absence, Doctor Paterson took a post graduate course on tropical medicines in England.

Julius Kobernik, vice president, Engineering Research & Equipment Company, has returned to Dallas, Tex., following a two weeks' business trip to Chicago, Massillon, Ohio, and New York City.

* * *

J. H. Mann, vice president, and manager at Monroe, La., of the Imperial Oil & Gas Products Company, has sold his interests in that organization to other members and will devote himself to other personal affairs.

* * *

W. L. Valentine, president of the Fullerton Oil Company and a director of the Security Trust & Savings Bank, Los Angeles, Calif., has been elected second vice president of the Automobile Club of Southern California.

* * *

Harry F. Sinclair, president and chairman of the board of directors of the Sinclair Consolidated Oil Corporation, recently spent several weeks in Los Angeles, Calif., the visit to the West Coast being strictly for pleasure.

* * *

Dr. W. R. Calvert, one of the charter members of the American Association of Petroleum Geologists and of the Society of Economic Geologists, is organizing a land and geological department for the Grayburg Oil Company.

* * *

A. C. (Cy) Rubel was recently appointed chief petroleum engineer of the Union Oil Company with offices in Los Angeles, Calif. Mr. Rubel was formerly superintendent and in charge of the Union company's repressuring work at Dominguez.

* * *

Burt E. Hull, president of the Texas Pipe Line Company, Houston, Tex., made a nonstop flight from Houston to Milwaukee, Wis., the past week. The trip required less than seven hours. Matt Nienamen, pilot for the company, was at the controls of the airplane.

* * *

Herman Stabler, head of the conservation branch of the United States Geological Survey, is making an extended tour of the oil fields where the survey has men, supervising operations on government lands. He spent a few days in Tulsa while visiting the Oklahoma fields.

* * *

D. W. Harris, vice president of the Arkansas Natural Gas Corporation, at Shreveport, La., spent a week in New York in connection with the purchase by the Arkansas of the Little Rock Gas & Fuel Corporation. E. N. Watkins, secretary, and R. W. Curran attended to details of the transfer at the Little Rock offices.

* * *

W. F. Dunning has returned to the Standard Shipping Company, 26 Broadway, New York, as assistant to the management. He formerly was assistant superintendent of operations, then vice president and treasurer of the Beacon Oil Company at Everett, Mass. Last spring he resigned that position to take a complete rest when his health became impaired.

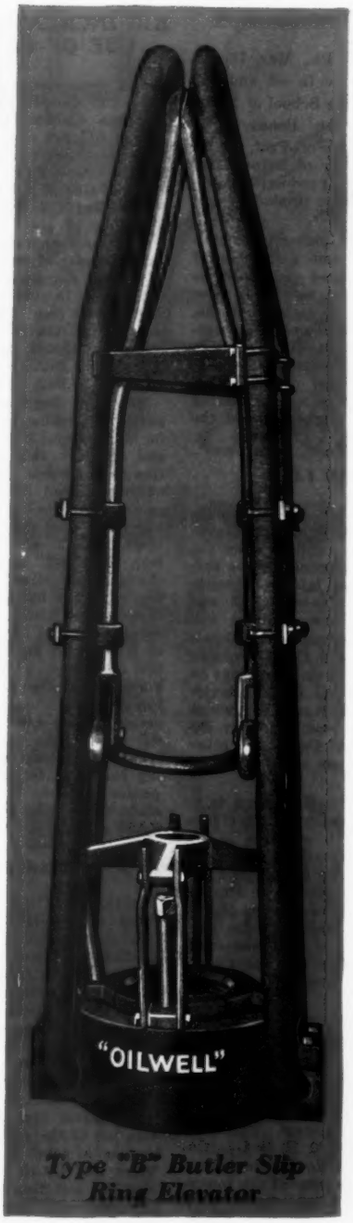
* * *

Dr. Boris Kazmann, of Rehoboth, Palestine, is in the United States in connection with the proposed development of the oil shale resources of that country. Doctor Kazmann has conferred with the Department of Commerce for the purpose of obtaining information on the oil shale retorting work of the United States Bureau of Mines. Doctor Kazmann is making extended experiments in Palestine with a view to developing methods of extracting oils from the lime shales found there.

* * *

Vernon O. Murray has been appointed district representative of the Mine Safety Appliances Company, Pittsburgh, Pa., with headquarters at Salt Lake City, Utah. Mr. Murray has had considerable experience in mine rescue work and safety service, having been formerly in charge of No. 2 Mine Rescue Car of the United States Bureau of Mines at Reno, Nev. The Mine Safety Appliances Company also announces the appointment of C. N. Schultz as district representative at Buffalo, N. Y., succeeding C. M. Donahue, who has been transferred to the Pittsburgh office as assistant sales manager in charge of gas detecting and recording safety equipment.

FOR GREATER SAFETY



Type "B" Butler Slip Ring Elevator

Instead of lifting the casing by the top coupling, the Butler Slip Ring Elevator's extra long slips grip the outside wall of any make of casing without any possibility of slipping or crushing the casing. The slips release automatically when the cable slacks. Made in two styles—type "A" regular, type "B" extra-heavy.

905

OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Natural Gas Developments

GAS MEN ARE ASKED TO AID MUNROE AWARD

Every member of the American Gas Association is invited to submit names to the Association's Executive Board for the Charles A. Munroe Award for outstanding service performed during the year July 1, 1928, to June 30, 1929, according to announcement just made by Association headquarters in New York. This invitation to present suitable names is extended to the association's company and individual members, every officer and director and all chairmen and members of all general and sectional association committees.

The award will be made annually without lapse, and it is hoped to make the first presentation at the association's eleventh annual convention and exhibition at Atlantic City, N. J., October 14-18, 1929.

Mr. Munroe, a former president of the association and long identified with the gas industry, has donated $10,000 as the capital sum of the award fund. This has been invested and earnings will be available annually for the award.

Under the provisions of the award, the most outstanding contribution to the general interests of the gas industry may be presumed to include the following: Research, invention, operating methods or practices which reduce cost of manufacture and distribution, improved distribution or other service, increased sale of gas, development of new uses for gas, improved public and employe relations, promotion of safety, development of improved accounting practices, widening the field of gas making materials, new methods of manufacture, finance, publicity, new gas works products and by-products, rates, etc.

NATURAL GAS RESULTS IN NEW ORLEANS REPORT

NEW ORLEANS, Mar. 16.—Revenues of the gas department of the New Orleans Public Service showed a decline in earned revenue of $117,222.50 during January, 1929, compared to the same period in 1928 under the revised tariff on natural gas as substituted for artificial gas, according to Commissioner W. T. Hall. The records show a decline in per cubic feet consumption, but an increased use of gas on the basis of heat units. The gas bills of New Orleans showed a reduction of $569,242 for the four months ended January 31, 1929, compared to the same period for the preceding year.

During January it is shown that domestic consumers paid $140,706.08 for 231,703,800 feet of natural gas. On the basis of 600 heat units for the manufactured and 870 units for artificial gas the domestic consumption of gas is shown as having increased during the month since the B.t.u. total consumed was in excess of the figure for 1928.

SAN FRANCISCO LINE

HANFORD, Calif., Mar. 16.—The supervisors of Kings County have received application for a franchise from the Pacific Gas & Electric Co. of San Francisco to lay pipe lines through Kings County to convey natural gas from Buttonwillow to San Francisco and Oakland. The main line passes through Kings County northwest of this city to the east of the Kettleman Hills, with a branch extending easterly to Fresno. It is also intended to serve cities and towns along the line desiring to avail themselves of this service. The franchise would run for 50 years and the company would pay the county 2 per cent of the gross income, to begin five years from granting of the franchise. The receiving of bids was set for Monday, April 5.

COURSE IN GAS PRODUCTION

STATE COLLEGE, Pa., Mar. 16.—A new instructional course in oil and gas production started by the School of Mines and Metallurgy of the Pennsylvania State College, in charge of Prof. C. A. Bonine, includes a study of natural gas and the development and production methods involved in petroleum production engineering.

The new educational project is receiving the co-operation and assistance of leading men in the oil and gas industries of Pennsylvania. These men who form two advisory boards, one in natural gas, and the other in petroleum, are interested in the development of instruction along these lines of industry. They are also assisting the School of Mines and Metallurgy of the college in establishing a research program designed to aid the oil and gas industries.

UTAH-IDAHO LINE

DENVER, Colo., Mar. 16.—Mountain Fuel Supply Co. has been organized as a subsidiary of Western Public Service Co. to be in charge of production for the natural gas pipe line being laid from southwestern Wyoming to central Utah and southern Idaho. The new company will be under direct management of officials associated with Ohio Oil Co. Ohio company has turned over all its operations on the Hiawatha Dome and in the Baxter Basin district to the new company which also will operate the lease of Somir Petroleum Co., The Texas Corp., and other companies with holdings on the several structures.

The purpose of the arrangement is to bring about unit operation of the fields which will supply Utah with gas in accordance with a tentative agreement reached recently by land owners and operators. Interests identified with Prairie Oil & Gas Co. will have charge of the pipe line and transportation of the gas, Ohio Oil Co. interests of the production end, and Lone Star Gas Co. and Crawford interests of Pittsburgh of marketing the gas to consumers.

GREAT FALLS GAS RATES

CASPER, Wyo., Mar. 16.—The trial before the federal court on natural gas rates in Great Falls has been interrupted by the city entering the case. This case was started by the Great Falls Gas Co. against the State Public Service Commission in an effort to prevent the lowering of the natural gas rates being charged the citizens of Great Falls. The Public Service Commission, in a preliminary examination, found the company's charter had a clause by which the company was obliged to pay to the city a gross receipt tax of 2 per cent.

The commission ordered this tax abolished and the city immediately intervened, claiming the commission did not have authority to abolish this tax. The city officials argued that the ordinance relative to this tax was in force long before the Public Service Commission was established.

CALIFORNIA RATE CUT

The California State Railroad Commission ordered the Southern California Gas Co. to reduce its charges on natural gas for domestic and commercial purposes 10 per cent in the eastern division, which embraces San Bernardino, Riverside, Corona, Colton, Redlands, Rialto, Paris and contiguous territory. The commission estimated the cut, which will not apply to industrial consumers, will mean an annual reduction of $143,000.

BIG INCREASE SHOWN IN USE OF CALIFORNIA GAS

Gas consumption in 1928 for industrial and domestic purposes throughout southern California increased approximately 6½ per cent over 1927, based on production figures compiled for the three leading gas utilities of the district, Los Angeles Gas & Electric, Southern California Gas Co. and Southern Counties Gas Co.

The three organizations combined produced a total of 96,718,706,000 cubic feet of gas, as compared with 90,869,648,000 cubic feet in 1927, an increase of 5,849,058,000 feet. The number of meters installed at the close of the period aggregated 715,486, as against 680,794 at the end of 1927, representing a net increase of 34,692, or more than 5 per cent.

The Los Angeles Gas & Electric reported a striking increase in gas output for commercial and industrial purposes, and although this phase of the production is much less than the domestic, the output jumped 1,094,504,000 cubic feet, or about 65 per cent to 2,757,549,000 cubic feet. The domestic output, in the neighborhood of 16,000,000,000 cubic feet, was off somewhat, due to the change from mixed to natural gas having a greater heating power per volume.

Southern Counties Gas output increased nearly 1,000,000,000 cubic feet, or 8 per cent, to more than 13,000,000,000 cubic feet, while 7,844 services were added, bringing the total to 123,473. Southern California Gas production increased about 4,000,000,000 cubic feet, or 6.5 per cent, to 65,000,000,000 feet, while 14,000 services were added, bringing the total to 222,000. The two companies together laid 468 miles of new main during the year, making the total 6,869 miles.

LITTLE ROCK LINES

SHREVEPORT, La., Mar. 16.—Purchase of the Little Rock Gas & Fuel Co., manufacturers and distributors of artificial gas from 1859 until the coming of natural gas from the Caddo Field in 1910, by the Arkansas Natural Gas Corp., follows three months after the completion by the Arkansas Natural Gas Corp. of a 10-inch line to Little Rock from the Clarksville, Johnson County, Ark., field, bought and developed by the Public Utilities Corp. of Arkansas, a subsidiary of the Natural Gas & Fuel Corp., which was one of the properties figuring in the merger a year ago of the Benedum & Trees and Cities Service Co. producing, pipe line and distributing properties. This line ties into the Arkansas' main line from the northeast Louisiana and East Texas gas fields and another feeder from the Richland, Monroe and Champagnolle Fields to Trees compressor station at Emmett, Ark., is nearing completion.

OBSOLETE GAS RANGES

The average family cooks 4,784 pounds of food a year on the gas range, yet this appliance, judged from the standpoint of years of constant service, is one of the most abused in the average home, the American Gas Association reports. The association describes a local survey made by one gas company to determine the number of obsolete cooking appliances on its lines. Out of 28,000 meters investigated, only 5,000 modern ranges were found in use, consisting of 2,000 cabinet ranges, 2,000 oven-control ranges and 1,000 insulated oven ranges. The 23,000 remaining were declared to be obsolete cooking appliances.

The opportunity for replacing old and inefficient cooking units with the strictly modern type of gas range is almost beyond calculation, the association says.

EDMONTON RATE CASE

CHATHAM, Ontario, Mar. 16.—The Supreme Court of Canada recently dismissed the appeal of Northwestern Utilities, Ltd. and the cross-appeal of the City of Edmonton in the gas rates case. The company appealed against the decision of the Alberta Public Utilities Commission reducing its net rate from 45 cents to 42 cents on the ground that this involved a reduction of the investment return from 10 to 9 per cent. The city appealed for a lower rate. The Supreme Court decision confirms the rate set by the commission.

NEW PRODUCTION TOTAL ESTABLISHED LAST YEAR

Production of manufactured gas in 1928 is estimated in "The Public Utility Industry in 1928," issued by Pynchon & Co., at 456,000,000,000 feet, 2.3 per cent greater than in 1927; and of natural gas at 1,459,882,000,000 feet, 10 per cent above 1927 production. Total investment of the industry is estimated at about $4,750,000,000. Production of manufactured gas is reported to have increased by 329 per cent since 1904 and production of natural gas by 331 per cent since 1906.

Gas, it is claimed, is now used as a fuel in more than 21,000 industrial and factory operations in the United States. Data of the American Gas Association and the Census Bureau are quoted as crediting general industry with all consumption besides the service of 14,560,000 homes. The increased demand for gas as a result of the growth of the by-product coke industry is mentioned. Since 1913 the percentage of American-made coke represented by by-product coke is said to have increased from 27.5 per cent to 85 per cent.

The estimated distribution among several principal uses of manufactured gas consumed is stated comparatively in billions of cubic feet as follows:

Uses—	1928	1927	1926	1922
Household	338	329	323	260
Industrial and commercial	147	136	126	80
Miscellaneous	5	5	6	3

COMING CONFERENCES OF GAS ASSOCIATION

The annual Distribution Conference of the American Gas Association will be held at the Hotel Copley Plaza, Boston, Mass., April 3, 4 and 5. Among the papers will be: "Pipe Coatings and Corrosion," by J. K. Crowell, Westchester Lighting Co., Mount Vernon, N. Y.; "Status of Research Work on Soil Corrosion and Protective Coatings," by E. H. Logan, United States Bureau of Mines; "Pipe Joints," by O. S. Hagerman, American Light & Traction Co., Chicago, Ill.; "Field Application of Oxy-Acetylene Welding," by E. V. Kessinger, Empire Companies, Bartlesville, Okla.

The Joint Production and Chemical Conference of the American Gas Association will be held at Baltimore, Md., May 27, 28 and 29, under the auspices of the Carbonization Committee, Water Gas Committee, and Chemical Committee. H. J. Rose, The Koppers Co., Pittsburgh, Pa., is chairman of the Chemical Committee.

A comprehensive program has been announced for the first annual spring conference of the Accounting Section of the American Gas Association, at the Hotel Stevens, Chicago, Ill., March 21 and 22, and accountants from the manufactured and natural gas industries are expected to attend. Among the subjects for discussion will be "Natural Gas Land Department Records," by J. W. Kidd, Hope Natural Gas Co., Pittsburgh, Pa.

IT HAS BEEN SAID:

EXPERTO CREDE*

"Just Use Horse Sense"

It is not necessary to be a Combustion Engineer or "Expert" in order to see why the METTLER ENTRAINED COMBUSTION GAS BURNER is a ***superior burner.***

Each burner consists of a number of mixing units, each one of which is supplied with gas through four jets meeting at one central point in the mixing tube.

This puts the gas in violent agitation and produces a very thorough mixing of gas and air. Not only is the Mettler an efficient burner but it is also an economical one in that it does not burn or wear out.

It will last a lifetime.

Write for full information

METTLER GAS BURNERS HAVE NEVER BEEN SUCCESSFULLY IMITATED

We Welcome an Opportunity to Serve

*Trust One Who Has Had Experience

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406 So. Main St.
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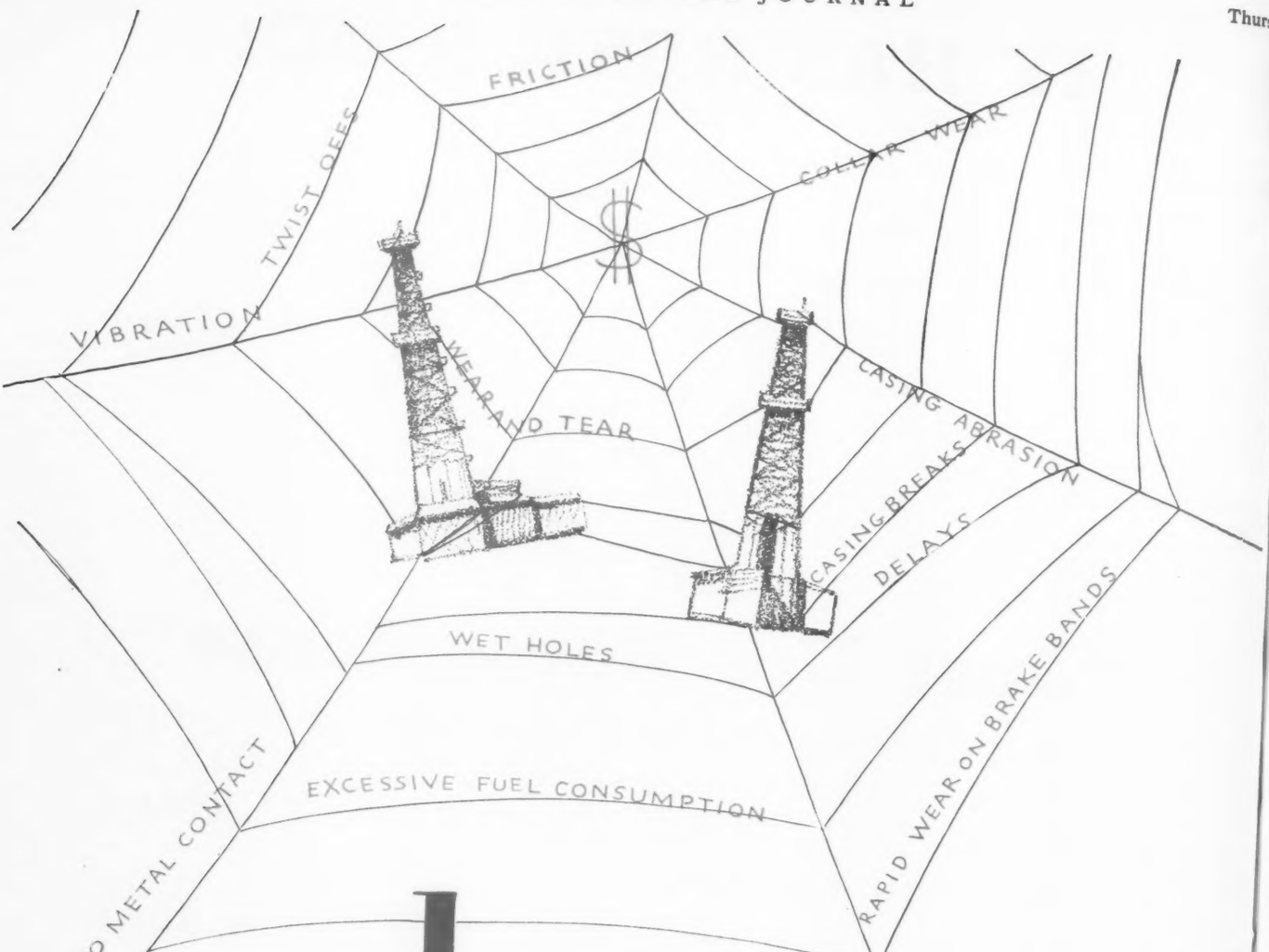
Please quote Prices on the equipment for the following:

No. of Boilers.....
H. P...... **Make**.....
No. of Stills.....
Size..... **Type**.....
Name.....
Company.....
City..... ***State***.....



keep your wells out of the web

Bettis Protectors - The

It's "CLEAR SAILING" with Bettis Protectors on your drill pipe

You'll drill more hole and "steer clear" of a lot of drilling troubles if your pipe is cushioned with Bettis Protectors. This isn't mere claim or theory. It's facts—backed up by the reports of practically every Driller who has used them.

Take, for instance, the matter of friction. Many a driller has been positive a twist-off occurred when he first began drilling with a Bettis-equipped string—because the pipe rotated so much easier. Just couldn't be convinced until the string was pulled.

At first thought you wouldn't believe that Bettis Protectors would have any effect upon brake bands—but every driller has learned that these protectors act as a sort of float when running in and thus relieve the brakes of a lot of strain.

No well casing has been known to wear through from abrasion from drill pipe where the latter was Bettis-equipped.

One Superintendent told us the other day that his Company is bringing in wells from 10 days to 15 days *sooner* because of the increase in speed permitted by Bettis Protectors.

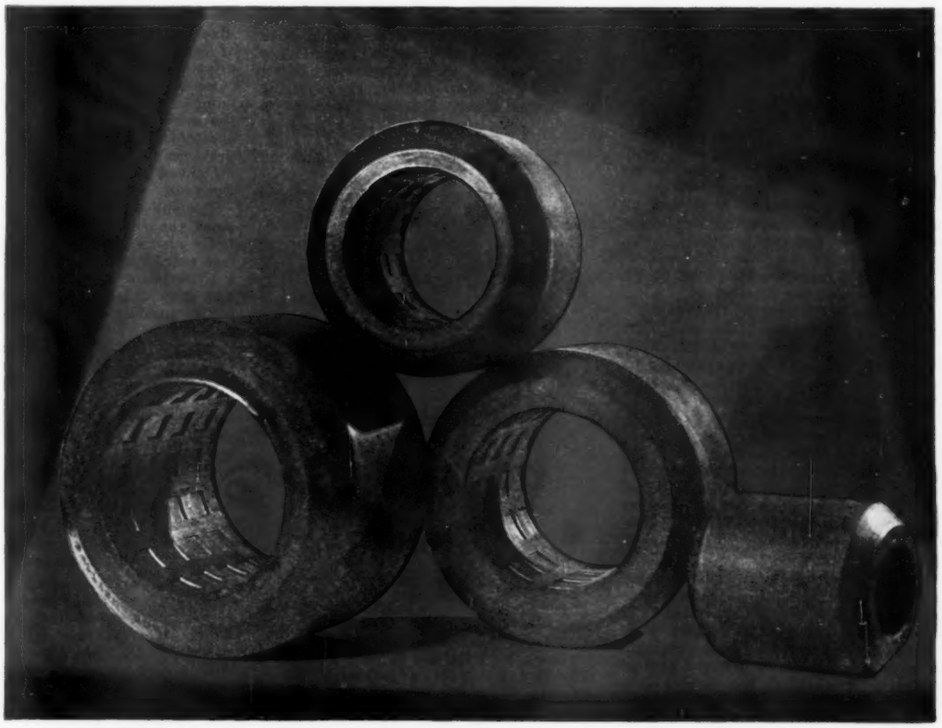
Another Superintendent states that he ran one string in six wells for a period of twelve months and the Protectors are still good for months more of service.

R. W. Richmond of Midland, Texas, dropped us a letter a few days ago in which he declares:

"I have just completed a 3,000-foot well in Winkler County on which we used a set of 4" Bettis Protectors and am glad to say that they are everything you claim for them, as they are not only a protector to the oil string of casing but are a great protection to the drill pipe and also the couplings, as the smaller strings of pipe are very flexible and with but very little weight cause a twisted and crooked condition of the drill pipe which these Protectors have a tendency to correct. These couplings were second hand but by using Bettis Protectors they are good for several more wells."

One of the largest operators, at Orange, Texas, writes: *"When the well was abandoned, we were successful in saving practically all of our 6⅝" pipe, which was apparently in as good condition as when it was set. However on the 10½" in the same well, on which the drill pipe was not equipped with Bettis Protectors, there was a total loss."*

Speaking of Texas, practically every active field is "strong" for Bettis.



"Best bet yet!"

In California there are mighty few wells not drilling with Bettis Protectors . . . . and to date more than 110,000 of our rubbers have been placed in service.

If you haven't tried Bettis rubbers you are cheating yourself out of increased production and lower drilling costs. The best test is to try them.

We'll be glad to send a catalog and other engineering data.

Fully Patented

Patterson-Ballagh Corporation

Insurance Exchange Building, Los Angeles

39 Cortlandt St., New York City

Mid-Continent Distributors:

Bettis Sales Co., 617 Public National Bank Bldg., Houston, Texas

Stocks carried in Los Angeles, Long Beach, Santa Fe Springs, Ventura, Bakersfield, Coalinga, Tulsa, Houston, Wink, New York City.

genuine anti-friction Rubbers

EQUIPMENT AND SUPPLIES

PRODUCTION OF WARNER TRAILERS IS INCREASED

Owing to increased volume of business the Warner Manufacturing Co., Beloit, Wis., has obtained additional manufacturing facilities which will triple its previous production. Space has been obtained from the Electric Wheel Co. in Quincy, Ill., with up-to-date machinery and equipment and plenty of space for future expansion. Just as rapidly as possible the manufacture of the Warner line of trailers will be shifted to the Quincy plant. The Beloit plant will be continued with its entire facilities concentrated on the production of electric brakes, which are used as standard equipment on all Warner trailers. Demand for both brakes and the trailers has increased to such a point that the company reports both products could not be handled in the same plant any longer.

The Warner Manufacturing Co. has been building trailers continuously since its organization in 1916. Its line covers a variety of two, four and six-wheel trailers for all classes of work and all sizes of trucks. Warner electric brakes employ a new braking principle. Automobile and truck companies are said to be watching its performance.

BUSINESS NOTES

The Central Alloy Steel Corp., Massillon, Ohio, has received an order for its rust-resisting product, Toncan iron, as material for 11 miles of pipe required by Trinidad Leaseholds, Ltd., of Trinidad, British West Indies. The pipe will be used for oil gathering lines.

B. F. Baker, treasurer of the Kewanee Boiler Corp., Kewanee, Ill., was elected president and treasurer at the recent annual meeting of the company. As president he succeeds his cousin, the late E. E. Baker.

Capt. M. F. Behar, since 1924 advertising manager of the C. J. Tagliabue Manufacturing Co., has been appointed to a similar position with the Quigley Furnace Specialties Co., New York. Captain Behar is the author of many technical articles on mechanical engineering subjects and is an inventor.

The Wagner Electric Corp., St. Louis, Mo., has added K. G. Baker to its sales force in Cincinnati, Ohio. Mr. Baker is a graduate of Perdue University.

H. B. Burlow, vice president of Templeton, Kenly & Co., Ltd., Chicago, manufacturers of Simplex jacks, is making a tour of the Mid-Continent oil fields.

The Reading Iron Co., Reading, Pa., has made E. W. McHenry district sales representative in Houston, Tex.

The Van Kuran Advertising Agency, Los Angeles, Calif., has been consolidated with Edwin Bird Wilson, Inc., of that city and will operate as a subsidiary of the latter organization.

William D. Moorer, Tulsa Loan Building, Tulsa, has been made distributor in Oklahoma and Kansas for Tube-Irons, Inc., Louisville, Ky.

BUFFALO OFFICE IS MOVED

The Buffalo, N. Y., office of the Brown Instrument Co., Philadelphia, Pa., is now located at 402 Marine Trust Building, having recently removed from 624 Ellicott Square. O. B. Wilson has been placed in charge of the company's Cleveland, Ohio, office.

AVNSOE NOW VICE PRESIDENT

The board of directors of the International Cement Corp., New York, has elected Th. Avnsoe to the office of vice president in charge of operation and construction. Mr. Avnsoe has been acting as assistant to the president.

SUN RUBBER CO. EXPANDS

The sales and production departments of the Sun Rubber Co., Barberton, Ohio. have been extended for the manufacture of rubber molded goods of special design. William German, for 14 years associated with the Goodyear Tire & Rubber Co., has joined the Sun organization and will have charge of the new department.

FILTER KEPT AT HIGH POINT OF EFFICIENCY

The Cuno Auto-Klean oil filter, manufactured by the Cuno Engineering Co., Meriden, Conn., was introduced into this country from Europe, where it has been in successful operation on automobiles, trucks, tractors, ships, airplaines, Diesel engines and other machinery requiring an efficient filter. The Cuno operates on

the principle of "edge filtration." The disk edges catch even the most minute particles, for it is said to have a filtering efficiency equal to a 200-mesh woven screen.

A turn of the handle scrapes the filter discs clean. The loosened dirt settles to the bottom of the large sump, the filter being kept thus at a high degree of efficiency. The manufacturing company says there are no complicated parts, that no replacements are necessary and that the filter lasts as long as the engine itself.

HAVEN JOINS M'KEE COMPANY

William A. Haven, for the last 10 years superintendent of blast furnaces for the Republic Iron & Steel Co., Youngstown, Ohio, has resigned that position to become vice president of Arthur G. McKee & Co., engineers and contractors, Cleveland, Ohio.

JOINS SOUTHERN RUBBER CO.

O. D. Upton, who represented the Cincinnati Rubber Co. for years in the Mid-Continent territory, has been made vice-president and general manager of the Southern Rubber Manufacturing Co., Dallas, Tex., which makes molded rubber goods for the oil industry.

CATERPILLAR FIFTEEN READY

The Caterpillar Tractor Co., San Leandro, Calif., and Peoria, Ill., announces Caterpillar Fifteen is ready for delivery. The Fifteen completes the Caterpillar line of small tractors, giving three sizes designed to fill the need for a track-type tractor.

PRODUCTION OF STEEL NOW AT HIGHEST RATE

By B. E. V. Luty

PITTSBURGH, Pa., Mar. 18.—Apparently long on the verge of being placed, the line pipe for the Monroe to St. Louis natural gas line has not yet been ordered.

As to the financing of pipe lines and other construction work, involving long term obligations, pipe producers do not feel that the high money rates so much talked about of late make any particular difficulty. They point out that there is nothing like "tight" money, there being merely relatively high interest rates on demand loans in certain quarters, particularly in Wall Street, while financing of long term bonds is another matter altogether. It is pointed out that money rates have been somewhat high for many months, yet the production of steel since the middle of last year has been at an exceptionally high rate, well above any previous records when allowance is made for the usual seasonal variation through the year.

Demand for standard or merchant pipe since the first of the year has been a trifle above that in the same period of last year, but that demand was probably a little below that of the year previous, and it is a matter of statistical record, by the production figures, that 1927 was under 1926.

The matter of prices on standard pipe is in a somewhat mixed condition. There are reports from a few districts of shading by jobbers, which mills having pipe on consignment have to recognize. On the other hand it is said the mills undertook as of March 1 to remove an extra preferential or trimming long given a few large distributors, and that they have in contemplation a plan to reduce the jobbers' trimmings all around, the object being to foster the system of jobbers carrying pipe on consignment.

Pipe mills are running at not over 50 to 55 per cent, while seamless tube mills are at 75 to 80 per cent. The latter have only a moderate amount of oil country goods business, but they are doing very well indeed in mechanical tubing and fairly well in boiler tubes.

Production of steel as a whole has increased farther and is now at by far the highest rate on record. March or April is naturally the peak month, but February showed a rate about 5 per cent over the previous record for any month, and production is running still heavier this month. The peak in production is probably at hand. The seasonal decrease, to a low in July, generally runs 15 to 25 per cent. From the present state of affairs as visible on the surface it looks as if the decrease when it does come will be unusually mild.

Finished steel prices are very steady and in most lines there is no difficulty in maintaining them. In several lines mills have announced price advances in the past few weeks, but these do not come up for much test as they would apply chiefly to second quarter contracts and buyers are so well covered they will be getting supplies at old prices for a considerable part of April.

Scrap is dull and a shade easier. Valley pig iron producers are trying to mark up asking prices.

"WHEREVER WHEELS TURN"

"Wherever Wheels and Shafts Turn" is the subject of a 150-page book just printed by the Timken Roller Bearing Co., Canton, Ohio, describing various uses of Timken bearings and explaining the principle on which they operate. The volume contains much technical information and is designed to serve as a handbook on this subject.

AIR-COOLED ENGINE HAS DISTINCTIVE FEATURES

In 1905 the first air-cooled engine was developed for industrial and farm use by The New Way Motor Co., of Lansing, Mich., and year after year there has been an increase in the number of air-cooled engines in use for industrial and farm purposes, besides those for aircraft power.

The New Way twin-cylinder engine is a valve-in-head type with detachable cylinder head. A large inspection plate may be removed, exposing all moving parts. A distinctive feature is the ease with which pistons may be removed and replaced through the inspection plate opening. Roller bearings, air governor, Eisemann special flywheel magneto, Tillotson float feed carburetor and air cleaner and Lynite connecting rods are standard equipment on this new engine.

The system of cooling is the same as that employed by all New Way air-cooled engines. The flywheel is provided with a series of curved blower blades around its periphery, and as it turns it creates a partial vacuum in the wheel housing. The strong suction effect draws air in and down through the cylinder jackets. The air currents pass over and between the flanges at fairly high velocity, and as there is a large amount of exposed surface, the excess heat is promptly disposed of, being absorbed by air passing around the cylinders, which is ejected from the motor compartment by the action of the blower flywheel.

TRADE LITERATURE RECEIVED

A series of bulletins prepared by the George D. Roper Corp., Rockford, Ill., and presented in a binder cover as catalog 54, describe Trahern rotary pumps manufactured by the company and give several pages of useful technical information and engineering tables.

The Sullivan Machinery Co., Chicago, is sending out its 56-page catalog No. 85-B, listing and illustrating equipment and supplies for use with Sullivan diamond core drills, including black diamonds, drill rods, safety clamps, water swivels, core barrels, fishtail bits, etc.

The Buyers' guide, issued by the International Nickel Co., New York, contains a list of concerns throughout the country handling various nickel alloy steel products.

An article by L. G. E. Bignell in the March number of the Rig and Reel, published by the Parkersburg Rig & Reel Co., Parkersburg, W. Va., describes and pictures ingenious devices built by oil-field workers, including a rocking-chair made from bullwheel cants, a typewriter stand made from 1-inch pipe fittings and a washing-machine driven from a band-wheel crank-shaft on a drilling well.

The current number of the Hyatt Rollergravure contains a page of pictures, "Cleaning Highways the Hyattway."

The Meriam Co., mechanical engineers, Cleveland, Ohio, have prepared a bulletin on "Testing the Accuracy of Recording Meters with a Meriam Manometer Portable Installation."

"The New Ryan," is the subject of a folder printed by the Mahoney-Ryan Aircraft Corp., Anglum, Mo. The new brougham which the folder describes is said to have a cruising speed of more than 100 mph with the J-5 motor and around 118 miles with the J-6.

OPENS BRANCH IN WICHITA

The Bovaird Supply Co. of Tulsa has opened a branch in Wichita Heights, Wichita, Kans., to serve Sedgwick County.

The Most Popular ARC WELDER ON THE MARKET

THE MORE YOU ARC WELD THE MORE YOU SAVE

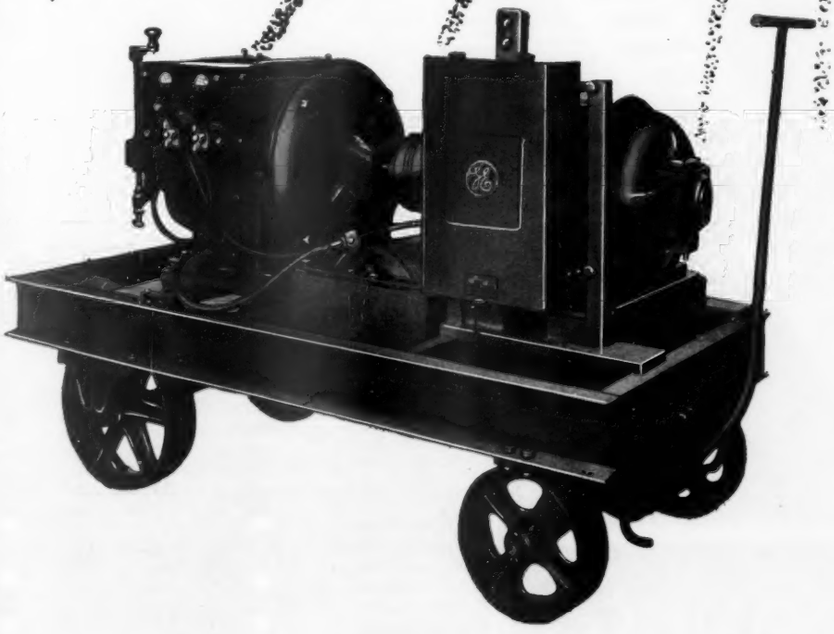
"Type WD" is its name. Introduced less than a year ago, it is now actually outselling every other type of arc welder.

It's the simplest, most substantial, and best-looking set built. Liberal use of high-grade materials, fine workmanship, and good design—inherent in all G-E products—are apparent at a glance. It is a self-excited set—that means no separate exciter to look after.

No other arc welder excels it in speed of welding or deposition of metal. Infinitely small gradations of welding current can be obtained simply by turning a handle. It is extremely easy to operate and will give 24-hour service day after day. And we back our reputation against its ability to meet N.E.M.A. and N.E.L.A. ratings—at any time.

A call to your nearest G-E office will bring you complete information.

TYPE WD



G-E welding electrodes —when used with Type WD arc welders—produce strong, smooth welds at great speed.

530-58A

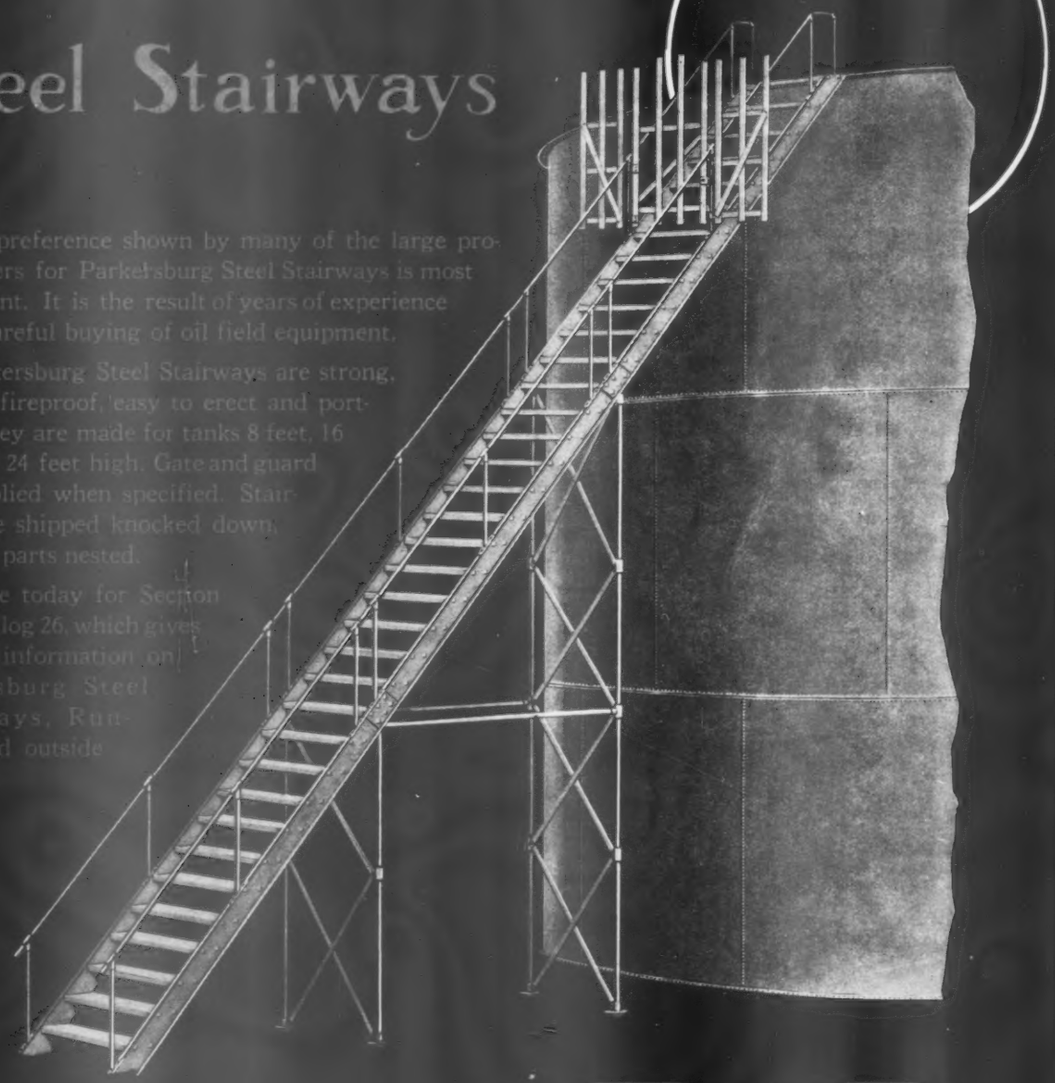
GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

Parkersburg

HAS SERVED THE OIL FIELDS OF THE WORLD FOR THIRTY-ONE YEARS

Steel Stairways



THE preference shown by many of the large producers for Parkersburg Steel Stairways is most significant. It is the result of years of experience in the careful buying of oil field equipment.

Parkersburg Steel Stairways are strong, entirely fireproof, easy to erect and portable. They are made for tanks 8 feet, 16 feet and 24 feet high. Gate and guard are supplied when specified. Stairways are shipped knocked down, with the parts nested.

Write today for Section "S," Catalog 26, which gives detailed information on Parkersburg Steel Stairways, Runways and outside Ladders.

Parkersburg Products

Steel Derricks & Steel Crown Blocks	■	Pipe Tools (A.P.I. Standard)	■
Chain Driven Sand Reels & Bailing Reels	■	Portable Drilling Machines (Wood & All Steel)	■
Steel Wheels	■	Bolted Steel Tanks	■
All-Steel Standard Rigs	■	Miscellaneous Drilling Equipment	■

Check the equipment in which you are interested, tear out and return this page, with your name and address to us, and we will send you complete information on the items checked.

The PARKERSBURG RIG & REEL COMPANY

Executive Offices & Main Plant, Parkersburg, W. Va., U. S. A.

Sales Offices, Warehouses and Stocks Carried in Every Producing Field

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

WHY DOES HOLE STRAIGHTEN?

I have noticed in several rotary drilling operations that our greatest tendency to crooked hole lies between the depths of 1,000 and 2,000 feet and that below 2,000 feet the deeper we go the less difficulty we seem to have in making straight hole. In a well we have just completed, for example, we made practically straight hole for 1,200 feet. From 1,200 to 2,000 feet there was a vertical correction of about 90 feet. The well was drilled to a total depth of 3,580 feet, but from the 2,000-foot level to the point at which we completed the well there was a further vertical correction of only 25 feet. This is fairly typical of experiences we have been having right along. I have a theory as to the explanation, but I would like to have other views.—O. L. T.

This subject recently was discussed by D. R. Snow, of the Barnsdall Oil Co., before the Geological Society of Tulsa. He gave a logical answer to a question similar to yours. His answer was about as follows: During the first 1,000 feet drilled, the weight imposed upon the bit is rarely excessive. But as the hole becomes deeper the weight of drill pipe resting on the bit increases enough to make the hole go crooked. When this occurs it is often necessary to lighten the weight on the bit to prevent twist-offs and the hole then tends to go more nearly vertical again.

It is probable that the character of the formations being drilled plays an important part. It also stands to reason that suspending a large part of the weight of the drill pipe in a hole should tend to keep that drill pipe and the attached bit going straighter than would be the case when the weight of the drill pipe is imposed upon the bit.

Although the foregoing theories are based upon actual drilling and well survey data, they are not to be considered final. Nearly all of the large oil companies are collecting data upon the causes of crooked holes and the remedies, and these data are being made available to those interested. Many of the companies are formulating what they consider proper practices for the drilling of straighter holes. Such progress is being made in studies of the crooked hole problem by different oil companies that theories which seem conclusive today may have to be discarded tomorrow.

Drilling methods to make straighter hole are being developed rapidly and The Oil and Gas Journal spares no pains to keep its readers fully informed concerning these developments. The subject is to be discussed before the American Association of Petroleum Geologists at Fort Worth, Tex., this week, when important information should be made available.

CONTOUR LINES EXPLAINED

I wish you would give me an explanation as to the reason contour lines are so important. I understand in a general way but when asked, could not give a clear explanation on it.

In your issue of February 21, you showed a contour or structure map of the Oklahoma City Field and mentioned that the big production was looked for on the 1,080 contour line. I presume this is the elevation of the contour. Then why has that a bearing on oil 6,500 feet under the surface? I asked two geologists and their reasons were not clear. I have since asked a dozen oil men and while they will not admit it, they don't know any more about it than I do.

In the Panhandle of Texas where I have some production, I always understood that the contour lines we used were the distance from the top of the big lime to sea level. The big production there was on the 850 to 800-foot contour line. Further, I realize that the top of the dome is usually only gas and to get the big production, you must drill on a lower contour on the side of the structure. Why would the oil not be on a level and better on the top, although deeper, than on the side?—L. A. M.

It is difficult to answer your questions without the use of illustrations such as are used in elementary text books on petroleum geology. However, if you will hold a sheet of paper by opposite edges and push these edges toward each other, the paper will arch upward or downward. If you will do the same thing with a tablet of paper or the pages of a magazine the same thing will happen and all of the sheets of paper or pages will be arched the same way, up or down.

This sort of thing has happened to the beds of rock or the rock strata that make up a large part of the crust of the earth. The beds lie one on top of another, like the sheets of paper or the pages of the magazine, and they have been bulged or folded and arched either up or down.

The folds that are arched upward are called anticlines, and those that are arched downward are called sinclines. Anticlines or upward folds are generally referred to as structures. Oil in commercial quantities usually occurs in porous beds on the anticlines. Water generally occurs in these same beds in the sinclines.

Structure contours are used to show the shapes of these anticlines and sinclines. To understand how the contours do this it will be necessary to use your imagination.

If you walk around the shore of a small island, you really follow a contour around the island, that is you follow a line of unchanging elevation around the island. This line of equal elevation (that is to say, this contour) shows you the shape of the island if drawn on a map. Now suppose that the water level should rise 10 feet so that you have a new shore line. This new shore line would make a new contour around the island, 10 feet higher than the first and when drawn on the map would show you the shape of the island at that height. If the water should rise still another 10 feet, it would make another contour at that height, and so on until finally the water would make a comparatively small ring around the highest part of the island. If you should draw all of these contours on the same map you would have a contour map of the island. The contour interval, or the height of one contour above another, would be 10 feet. Such a map would give you a good idea as to the shape of the island and its height at various places.

So it is with contours drawn to show the lay of the top of an oil sand. On the map to which you refer the highest part of the structure is represented by the small closed oval, marked 1120, in Section 36-11n-3w. If you will imagine that the oil sand is covered by water instead of by rock and that the small oval in Section 36 is a little island projecting above the water; and then, if you will imagine the water level dropping 10 feet at a time, you will have a succession of water lines or shore lines which are the same as the 10-foot contours shown on the map.

Gas and oil occur in the relatively high parts of structures, and structure contours are of importance because they show the relatively high and relatively low parts of the structures.

In regard to the last part of your question, oil may or may not underlie the gas on top of a dome or anticline. It would be difficult to drill through high pressure gas and might waste a vast quantity of gas if it were done.

There are three kinds of contours in common use in the oil fields. These are topographic contours, structure contours and convergence contours. Topographic contours show the lay or shape of the land surface. Such features as hills, valleys and streams are shown on topographic maps. Structure contours show only the lay of the beds of rock as described above. Convergence contours are used to show the changes in the vertical distance of the top of one bed of rock above another bed. You have evidently confused structure contours with convergence contours.

Contours generally are based upon sea level as datum, but may also be based upon any assumed datum. For more detailed information upon this subject you might write to the Director of the United States Geological Survey, Washington, D. C. You might also refer to some of the many good books upon elementary petroleum geology.

WHY IS IT CALLED THAT?

ARENACEOUS

When the geologist speaks of arenaceous rocks he means those derived from sand or containing sand. One isn't likely to see any connection between this word and the gladiatorial fights of ancient Rome, but there is a very direct one, for it comes from the Latin word "arena," the central area of the amphitheater, which was covered with sand to absorb the blood.

The arenaceous rocks are mechanical sediments produced by the disintegration and removal of siliceous rocks through the action of atmosphere, rain, rivers, frost, lake and ocean waves and other natural agencies. They should not be confused with siliceous rocks, those which contain silica.

MORE HELP IN FISHING JOB

In the Field Problems department of February 28 a fishing job was presented by D. H. D. Part of his letter follows:

"In attempting to pull a screen which had corroded and sanded up the wire wrapping became tangled and the screen jammed in the 6-inch casing. We pulled the screen up 8 feet and could pull it no further, each time breaking our drill-pipe in two. We put in a Gray release spear, which became fouled in the top of the second joint of the screen. We have used 135-ton pressure, which has broken the drill-pipe. We have pulled the die-collar off the top of five joints of drill-pipe, so that as matters now stand, the screen is 8 feet from the bottom with the release spear fouled in it, together with five joints of drill-pipe. We have no standard rigs and our foreman claims nothing can be done without standard tools and a standard pumping rig."

D. H. D. was advised by this department that an inside drill-pipe rotary cutter, running on 2-inch 4½-pound tubing or smaller tubing seemed to offer a way out of his dilemma. From the United States Veterans' Hospital in Tucson, Ariz., has come another suggestion, which is printed herewith. A diagram explaining the suggested procedure more fully accompanied the letter and this diagram has been forwarded to D. H. D.

Thanks are extended to the writer of the letter, now in the Veterans' hospital, for the interest he manifests and for his readiness to help. His letter follows:

"Having noticed a difficult fishing job on a rotary in your Field Problems page for February 28, I am submitting a plan which I think will work if the cutter does not. I have drawn a diagram as I understand the problem. My plan with an all-rotary rig would be as follows:

"First, as the screen and spear and drill-pipe are all fastened, evidently fouled in the 6-inch, I would get a drive-down socket to fit on the end of the drill-pipe, run in and try to knock the five joints of drill-pipe and screen loose by raising and dropping the socket with blocks.

"Second, if that knocked everything back to the bottom of the hole, I would get a set of jars made with drill-pipe joints, put them in a string of drill-pipe, put a special socket on the bottom of the drill-pipe, run in and take hold of the top of of the drill-pipe where the collar is gone.

"Third, use jars to knock down with every time the screen sticks coming up.

"I believe that the drill-pipe, spear and all will come out that way. I have had so many fishing jobs that I couldn't help noticing this one. I hope that my letter may be of some help.—C. B. K."

EFFECT OF SWABBING ON GAS

When I use a swab I get the increased oil production I am after, but I have noticed that the gas production is increased even more than the oil production. Can you give me an explanation of this?—D. S. N.

The swab generally is used in wells where the fluid level stands well above the productive formation. The high fluid level imposes back pressure on the formation and holds the gas under pressure in the formation. Each time the swab is run it lifts a large part of this fluid column from the well, thus removing back pressure from the sand and permitting the gas to rush into the well. This so reduces the pressure in the sand that water encroachment often is accelerated.

Such practice has come into general disfavor among the most progressive operators and the use of the swab is becoming more and more restricted to special conditions requiring the rapid removal of the fluid.

for

Cracking Units Refineries
Gas Engines Compressors
Pumps Vapor Lines
Crane Flanges, etc.

COPPER ALUMINUM
ARMCO MONEL

—

McCord Radiator & Mfg. Co.
DETROIT

WEST TEXAS OIL PRODUCTION AND STORAGE IN JANUARY

(Continued from Page 60)

STEEL STORAGE REPORT—WEST TEXAS—JANUARY, 1929

Company, farm—	No. tanks and size	Capacity	Stock	Room
CRANE COUNTY				
Gulf Pipe Line Co.:				
McElroy	2—80,000	160,000	123,504	36,4
Humble Pipe Line Co.:				
Fee	4—55,000	554,524	418,465	136,1
University	6—55,000			
Magnolia Pipe Line Co.:				
Warner-Quinlan	10—10,000	1,806,000	1,802,580	3,4
Warner-Quinlan	1—64,000			
Warner-Quinlan	30—55,000			
University	4—55,000	220,000	184,922	35,0
Southern Pipe Line Co.:				
Woodruff	1—55,000	105,000	2,351	102,6
Woodruff	3—10,000			
Hughes	2—10,000			
Texas Pipe Line Co.:				
Union Ld.	1—37,500	37,500	12,475	25,0
Anderson	12—80,000	2,665,000	2,518,845	146,1
Landreth	21—55,000			
Crane County grand total		5,548,024	5,063,142	484,9
CROCKETT COUNTY				
Humble Pipe Line Co.:				
Powell	1—55,000	55,207	6,060	49,1
HOWARD COUNTY				
Cosden Pipe Line Co.:				
Leased	2—80,000	440,000	373,106	66,8
Fee	4—10,000			
Roberts	2—10,000			
Roberts	2—55,000			
Arnelt	2—55,000			
Big Spring Refining Co.:				
Fee	1—10,000	10,000	5,638	4,3
Humble Pipe Line Co.:				
Fee	2—64,000	128,000	100,837	27,1
Magnolia Pipe Line Co.:				
Bell	7—55,000	1,037,000	1,017,826	19,1
Bell	8—80,000			
Bell	2—12,000			
Shell Pipe Line Co.:				
Roberts	2—80,000	160,000	91,200	68,8
Howard County grand total		1,775,000	1,588,607	186,3
JONES COUNTY				
Humble Pipe Line Co.:				
Noodle	1—55,000	55,634	8,275	47,3
MIDLAND COUNTY				
Atlantic Pipe Line Co.:				
Fee	5—55,000			
Fee	37—80,000	3,235,000	3,066,273	168,7
Gulf Pipe Line Co.:				
Fee	4—55,000			
Fee	6—80,000	700,000	256,852	443,1
Magnolia Pipe Line Co.:				
Fee	17—55,000	6,855,000	6,241,636	613,3
Fee	74—80,000			
Midland County grand total		10,790,000	9,564,761	1,225,2
MITCHELL COUNTY				
Col-Tex Refining Co.:				
Colorado	4—15,000	274,000	63,151	210,8
Colorado	2—67,000			
Colorado	2—30,000			
Colorado	1—20,000			
Magnolia Pipe Line Co.:				
Westbrook	6—55,000	330,000	304,301	25,6
Mitchell County grand total		604,000	367,452	236,5
PECOS COUNTY				
Gulf Pipe Line Co.:				
Yates	2—10,000	20,000	4,215	15,7
Illinois Pipe Line Co.:				
Yates	4—55,000	220,000	98,354	121,6
Humble Pipe Line Co.:				
Yates	3—67,500	198,430	130,358	68,0
Shell Pipe Line Co.:				
Yates	2—80,000	160,000	80,865	79,1
Pecos County grand total		598,430	313,792	284,6
REEVES COUNTY				
Skelly Oil Co.:				
Fee	1— 5,000	60,000	39,454	20,5
Fee	1—55,000			
Burford Oil Co.:				
Fee	1—25,000			
Fee	2—55,000			
Fee	7—10,000	205,000	78,268	126,7
Reeves County grand total		265,000	117,722	147,2
REAGAN COUNTY				
Humble Pipe Line Co.:				
Kemper	12—67,000			
Reagan County:				
Kemper	5—64,000	1,131,713	826,604	*304,1
Reagan County Purchasing Co.:				
Kemper	16—80,000	1,280,000	164,651	1,115,3
Reagan County grand total		2,411,713	991,255	1,419,4
UPTON COUNTY				
Gulf Pipe Line Co.:				
Union Land	2—80,000	160,000	3,486	156,5
Marland Pipe Line:				
Burleson	1—80,000			
Burleson	6—55,000	410,000	31,205	378,7
Humble Pipe Line:				
Burleson	12—55,000	658,533	460,199	198,3
Mid-Kansas:				
Union Land	2—55,000	110,000	101,227	8,7
Texas Pipe Line:				
Union Land	1—10,000			
Union Land	1—64,000	74,000	67,462	6,5
So. Pipe Line Co.:				
Burleson	2—55,000			
Burleson	1—10,000	120,000	1,435	118,5
Shell Pipe Line Co.:				
Harrell	17—80,000	1,360,000	1,152,969	207,0
Concrete		1,700,000	.....	1,700,0
Borrowed from Marland	5—80,000			
Borrowed from Marland	2—55,000	510,000	321,511	188,4
Upton grand total		5,102,535	2,139,494	2,963,0

(Continued on next page)

A POMERANIAN MAY DO FOR A LAP DOG

BUT

you need *Bull Dog Qualities* for Protection

Don't be afraid of mud ruts or unimproved roads with the Goodrich Oil Field Special. It gets additional traction from the DESIGN of the tread shoulder.

THESE Goodrich Oil Field Special Silvertowns fight and bite their way through rough going like the thoroughbreds that they are.

"Burly and tough," "relentless in action," and "more than a match for the rut roads they travel" . . . say men who know the conditions that Oil Field Specials were built for.

With rows of sawed off "teeth" set firmly in a Goodrich Silvertown carcass, the side view of an Oil Field Special resembles the undershot jaw of a bull dog—designed to EXCEL in traction and wear.

Miles out from civilization you can rely upon it to plow a determined way across prairies, through mud, ruts, over unimproved roads . . . and fight every inch of the way back home.

Specify Goodrich on your next truck

Goodrich

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Silvertowns

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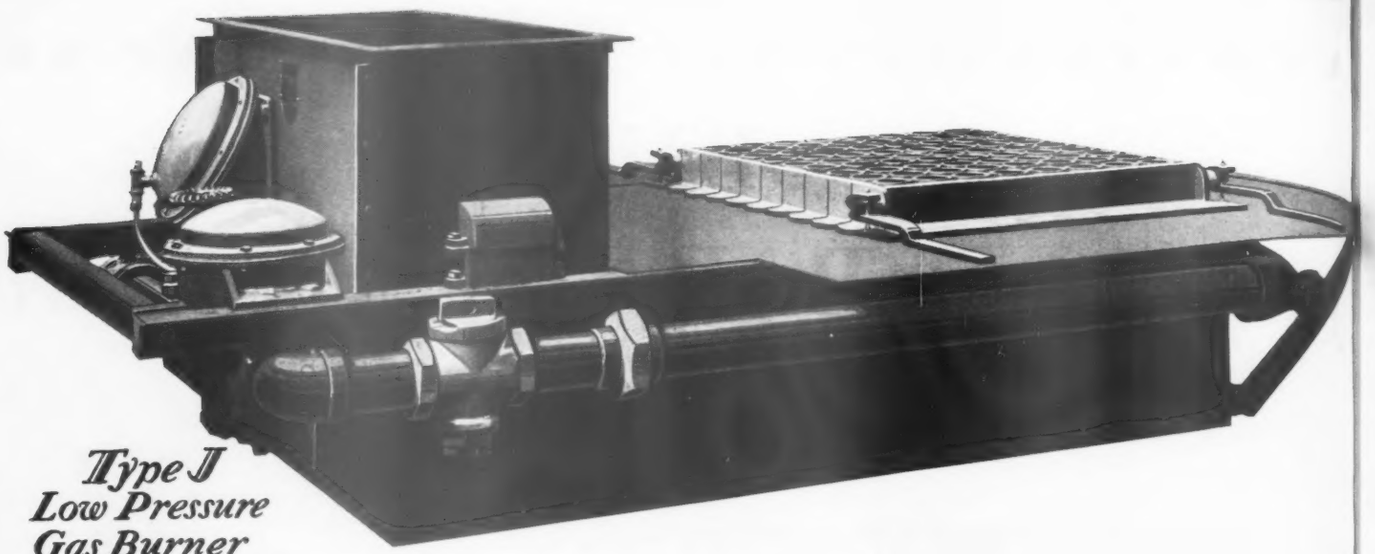
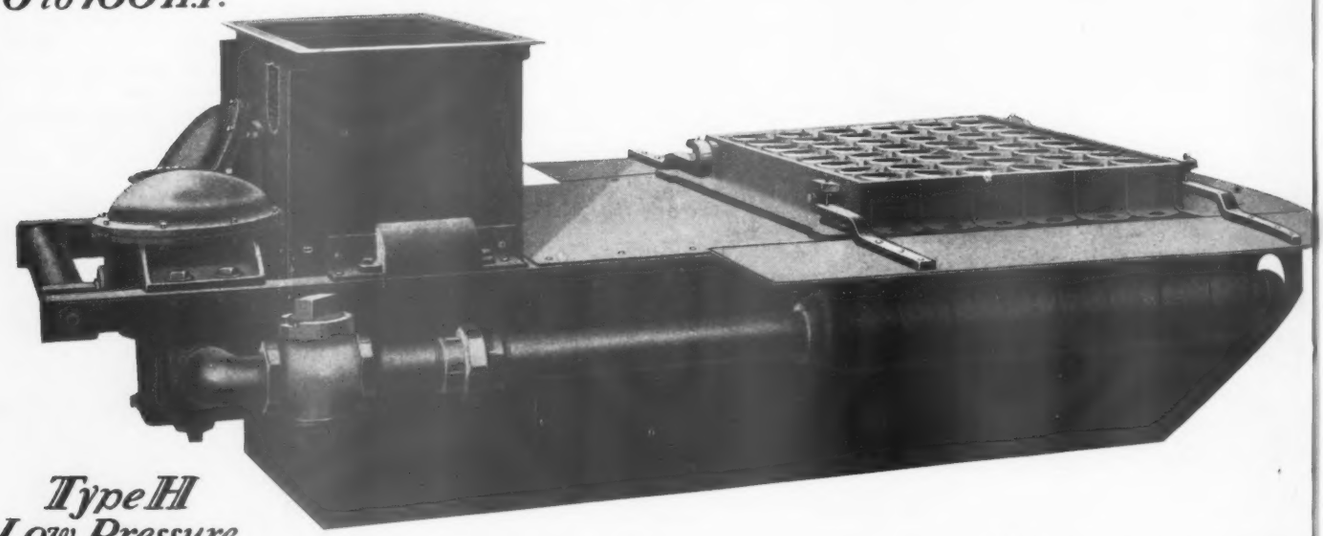
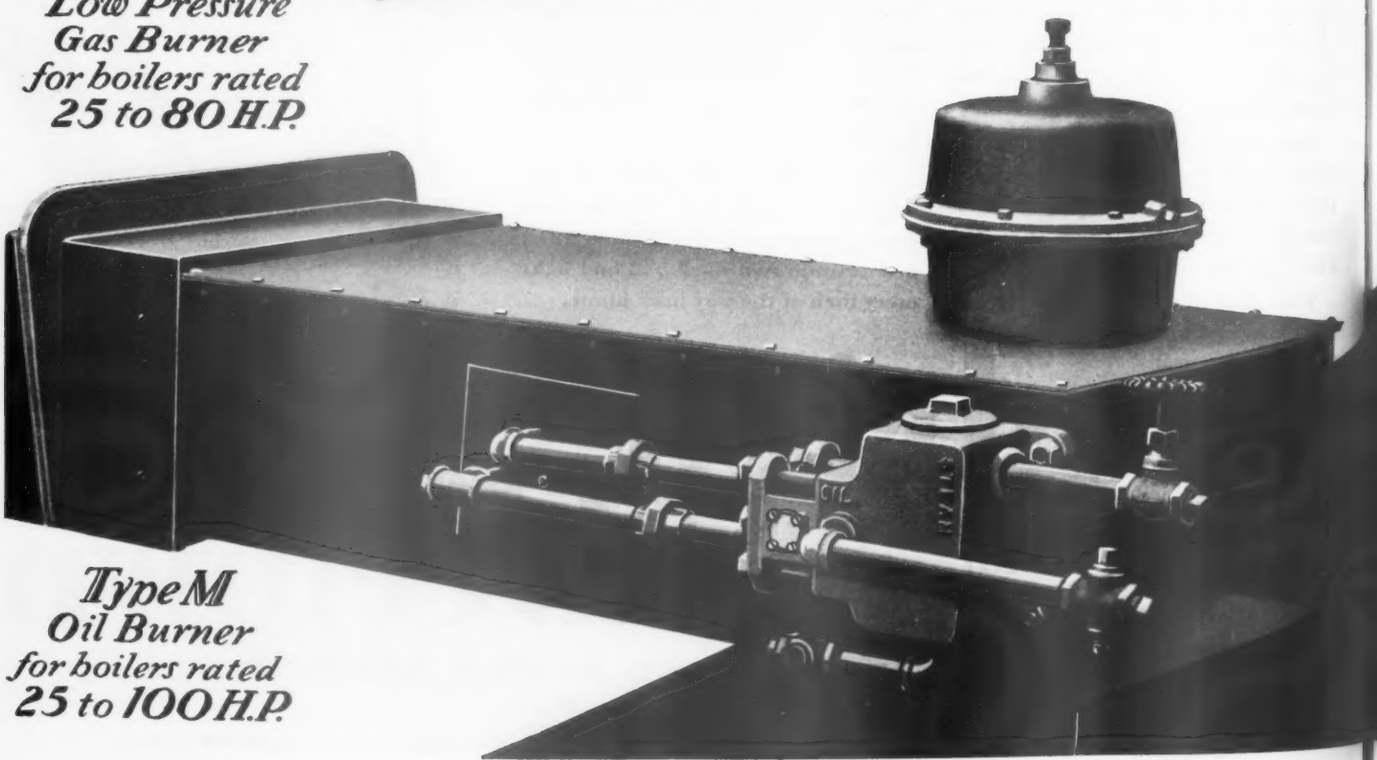


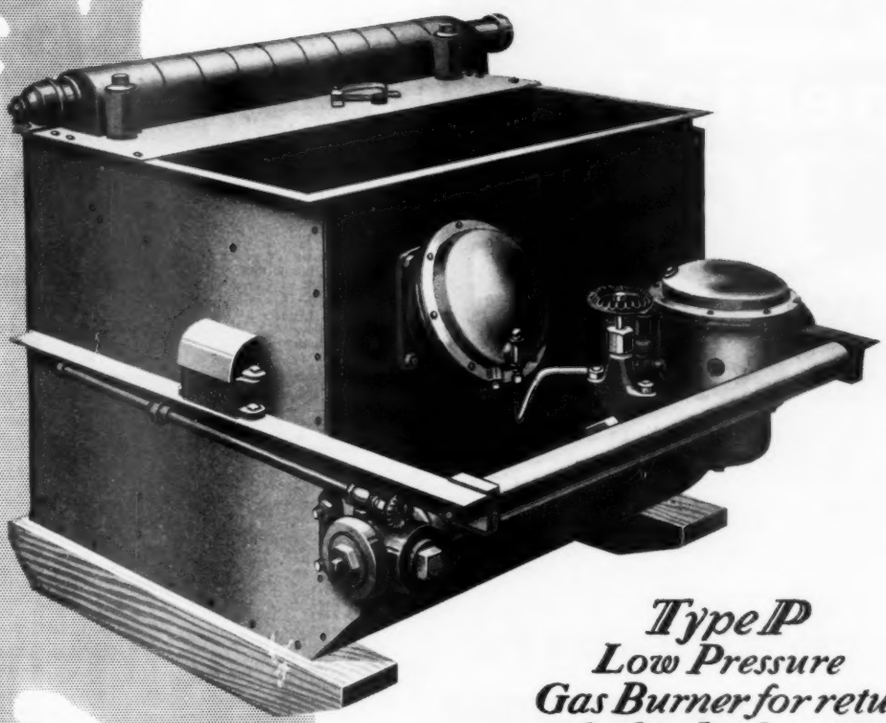
Type J
Low Pressure
Gas Burner
for boilers rated
70 to 100 H.P.



Type H
Low Pressure
Gas Burner
for boilers rated
25 to 80 H.P.



Type M
Oil Burner
for boilers rated
25 to 100 H.P.



Type P
Low Pressure
Gas Burner for return
tubular boilers rated
70 to 150 H.P.

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Dissolves scale from heaters, meters, water lines, engine cooling jackets and condensers. Takes only 2 to 12 hours to clean out scale thoroughly. Drains off as a sludge. Inexpensive. Proven in this service for many years. No matter how heavy the scale is, Dearborn Special 134 will remove it. First use will be serviced by our field men where practicable. Write describing equipment, send sample of scale, and order us to send necessary quantity of Dearborn Special 134 to clean out scale.

Dearborn Cleaners

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For opening drains.
For cleaning caked and extra dirty concrete floors.

Dearborn Cleaner No. 5

For general service in removing oil, grease and dirt from all types of oil field equipment.

Dearborn Cleaner No. 3

For cleaning oil and dirt from overalls and clothing.

For reclaiming rags.

For cleaning ordinary dirty concrete floors.

Dearboline, a non-explosive liquid cleaner that gives surprising results on metal surfaces.

They Prove Themselves

Dearborn Cleaners will surprise you by the speed and thoroughness with which they work. You will notice an economy in the quantity needed as compared to the general run of cleaners.

Order through your Dearborn service man or by letter.

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Every Dearborn Product is as reliable as is NO-OX-ID, the original rust preventive

NO-OX-ID
IRON-RUST
TRADE MARK
The Original Rust Preventive

VAL VERDE COUNTY				
Mid-Kansas:				
Fee	25—80,000	2,000,000	937,320	1,001,000
WINKLER DISTRICT				
Atlantic Pipe Line Co.:				
Leases	2—55,000	110,022	109,507	
Hendrick	15—80,000	1,200,000	1,109,334	90,000
American Petroleum:				
Hendrick	2—10,000	20,514	20,427	
Hendrick	4—80,000	314,435	188,882	125,553
Pyote	10—55,000			
Pyote	5—80,000	932,673	903,166	29,507
Buford Oil:				
Hendrick	2— 5,000	10,000	5,791	4,209
Gulf Pipe Line Co.:				
Hendrick	41—80,000	3,280,000	2,625,154	654,846
Humble Pipe Line:				
Hendrick	14—64,000	896,000	802,835	93,165
Independent O. & G.:				
Hendrick	2—55,000	120,000	55,383	64,617
Hendrick	1—10,000			
Pyote	2—55,000	110,000	66,633	43,367
Texas Pipe Line:				
Hendrick	10—80,000	800,000	205,201	594,799
Monahans	10—80,000	800,000	728,563	71,437
Magnolia Pipe Line:				
Hendrick	1—80,000	1,200,000	1,014,053	185,947
Halley	15—80,000			
Shell Pipe Line:				
Hendricks	9—80,000	730,000	673,877	56,123
Hendricks	1—10,000			
Pasotex:				
Hendricks	2—60,000	180,000	76,111	103,889
California Co.:				
Hendricks	1—55,000	455,000	20,955	434,045
Hendricks	5—80,000			
Prairie Oil & Gas Co.:				
Hendricks	3—55,000	165,000	24,517	140,483
Pure Oil Co.:				
Hendricks	11—55,000	605,000	529,801	75,199
Skelly Oil Co.:				
Hendricks	1—55,000	75,000	35,199	39,801
Hendricks	2—10,000			
Southern Pipe Line:				
Hendricks	20—80,000	1,620,000	337,724	1,282,276
Hendricks	2—10,000			
Section 20	3—55,000	165,000	102,255	62,745
Wickett	1—20,000	2,690,000	2,271,886	418,114
Wickett	1—25,000			
Wickett	2—55,000			
Wickett	31—80,000			
Texon Pipe Line:				
Brookfield:	3—80,000	240,000	.....	240,000
Hendricks	2—10,000	20,000	9,873	10,127
Texon Pipe Line Co.:				
Pyote	4—10,000	40,000	30,910	9,090
Pyote	1—80,000			
Shell Petroleum Co.:				
Concrete		1,100,000	1,001,115	98,885
Winkler District grand total		17,878,647	12,949,152	4,929,495
List of steel storage in Winkler District not owned by pipe line companies and not included in above figures—				
Cranfill & Reynolds:				
Hendricks	7—55,000	465,000	435,739	29,261
Hendricks	1—80,000			
Bluebonnet Refining:				
Hendricks	2—10,000	20,000	6,799	13,201
Valley Refining Co.:				
Hendricks	1—10,000	24,000	6,998	17,002
Hendricks	2— 7,000			
Grand total Winkler District		18,387,647	13,398,688	4,988,959
Grand total for West Texas		47,593,188	34,496,568	13,096,620

EASTERN FIELDS

(Continued from Page 64)

In the same district the Mid Penn Oil Co. is also due in the same formation on the Peton Tingler farm. In the Burning Springs district, Wirt County, Wagner & Co. have rig material at a location on the William Living farm. In Murphy district, Ritchie County, Park Bowser is rigging up on the M. R. Baker farm.

In Geary district, Roane County, the Elkins Oil & Gas Co. has started to drill on the Stacie Moss farm. In the same district the United Fuel Gas Co. is building a rig on the G. D. Wilmoth farm. In Lee district the Hope Natural Gas Co. has started to drill on the A. J. Ball farm. In Sheridan district, Calhoun County, W. S. Dailey & Co. have a gasser in the Salt sand on the R. E. Maze farm. In Walker district, Wood County, the Coplin Farm Oil Co. is drilling at 800 feet on the J. W. Coplin farm.

SOUTHEAST OHIO

In the SW of Section 3, Cambridge Township, Guernsey County, George Jewell and others completed in the Niagara lime, at a total depth of 3,380 feet, a test on the Chauncey Oldham farm. It produced 35 bbls. the first 24 hours.

In Warren Township, Washington County, Harry Schneider and others completed in the Berea grit a test on the Harry Schneider farm. The well produced 28 bbls. the first 24 hours after shot. In Jackson Township, Muskingum County, the Pure Oil Co. has a rig completed on the Otis McKee farm. In Fallsbury Township, Licking County, the Penn Ohio Gas Co. is drilling a second test on the Helen Young farm. In Perry Township, Muskingum County, the Rymilper Oil Co. is drilling on the William Knight farm.

In Jefferson Township, Noble County, M. S. Lee has a 5-bbl. pumper in the Berea grit at No. 6 on the Hannah & Mary Maginnis farm. In Aurelius Township, Washington County, Jerry Buckley is drilling a second test on the B. W. and Audry Hupp farm.

Perry and Vinton Counties

In Section 34, Coal Township, Perry County, the Preston Oil Co. has completed and shot in the Clinton sand No. 1273 on the Sunday Creek Coal Co.'s property. It is a 10-bbl. pumper. At Vales Mills, Section 6, Vinton Township, Vinton County, Townsend and others have completed a second test on the Edward Quick farm. It is a very light pumper in the Berea grit. In Knox Township the Co-operative Oil Co. has a 3-bbl. pumper at No. 3 on the Garfield Brooks farm. In Jackson Township, Knox County, the Preston Oil Co. is drilling on the Manuel Rine farm.

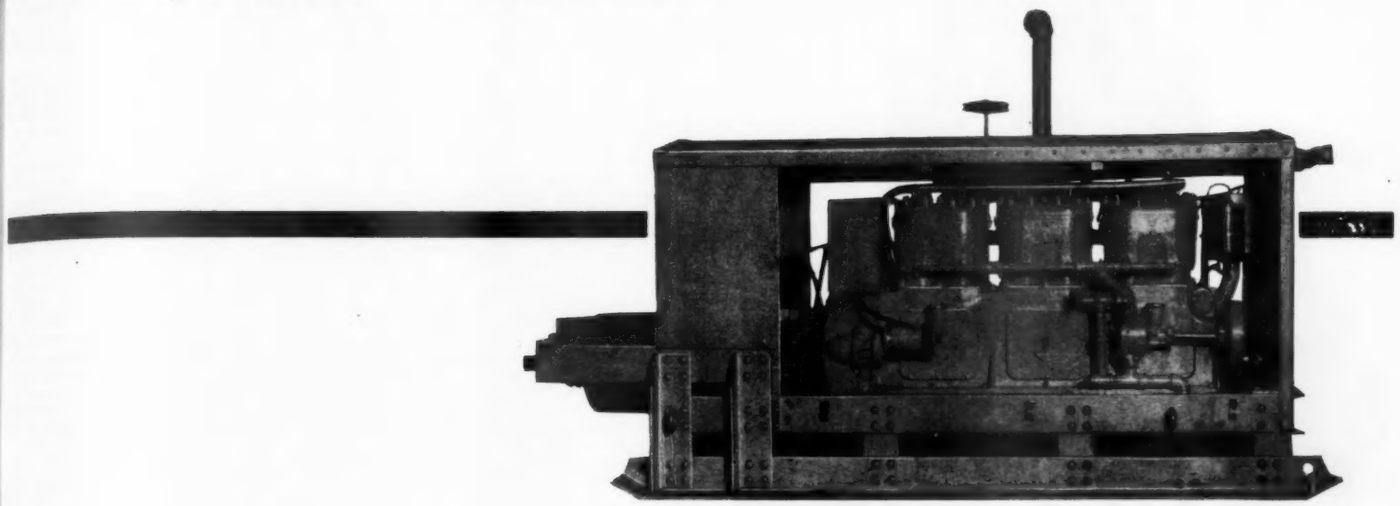
SOUTHWEST PENNSYLVANIA

In Buffalo Township, and west of developments in the new pool in Butler County, Pa., the test on the Thompson farm has been drilled to a total depth of 2,887 feet and is showing for a light gasser. The test on the Price farm is through the Fifth sand and going to the Speechley. The Phillips Gas & Oil Co. is drilling at 800 feet at No. 2 on the W. C. McFarlan farm. The same company is drilling at 825 feet at No. 4 on the Albert Harvey farm. The above comprises all that is doing in the pool at present.

In Morris Township, Greene County, Sprowells & Co. have a gasser in the Gordon sand on the Harry Clutter farm.

Without An Equal

. . . anywhere in the field



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O&GJ 3-21-Gray

MOUNT PLEASANT FIELD, MICHIGAN, COMING INTO MORE PROMINENCE

By Whit

MOUNT PLEASANT, Mich., Mar. 16. The Pure Oil Co. pool in the Mount Pleasant Field, in Midland and Isabelle Counties, is coming more into prominence as new wells are being brought in. The Dundee oil found in this field is void of sulphur and is 44 gravity. It is handled by the Pure Oil Pipe Line Co. from the field to Mount Pleasant, from where the oil is shipped in tank cars.

The latest completion in the field is a real producer and when entirely completed may make a much larger well than estimated when it started flowing at the rate of 50 bbls. an hour, making it the outstanding well in the pool which covers nearly 2 square miles in the six producers so far finished, with no dry holes. The well shows a fair volume of gas and since connected to the pipe line is reported at about 800 bbls. a day at a total depth of 3,535 feet or about 25 feet into the Dundee formation which was topped at 3,510 feet. The new well is the Pure Oil Co.'s No. 1 Reems, SE SW, Section 18, Greendale Township, Midland County, and 1,020 feet from the south line and 300 feet from the east line of the lease. This well was started December 6, 1928, completed March 2, 1929. Oil was shown in sand from 3,000 to 3,030 feet, then 50 feet of white slate followed by 80 feet of red rock.

A record of the hole will be of much interest to the public as it shows the different formations passed through until the Dundee formation was found.

Well Log—Sand and Casing

Feet	
0	13" casing 293 ft.
293	Slate, 10" casing 1,400 ft.
330	Sand, 6¼" casing 3,124 ft.
450	Fire clay, blue hard.
500	Sand, white.
530	Slate, black.
636	Slate, fire clay, white.
804	Sand, white.
810	Slate, fire clay, black.
1,019	Gys., shells, blue, hard.
1,035	Sl. shells.
1,142	Top Marshall, blue.
1,152	Slate.
1,195	Sand.
1,240	Red rock.
1,260	White sand.
1,297	Red rock.
1,387	White slate.
1,392	Black slate.
1,600	Lime shells.
1,610	White slate.
1,720	Shell.
1,725	White slate.
2,385	Coffee slate.
2,415	Berea sand.
2,460	White slate.
2,475	Brown slate.
2,770	Lime shells.
2,782	Brown shale.
	Lime sand.
2,900	Saginaw.
2,930	White slate.
2,975	Traverse formation.
3,330	White slate.
3,400	Lime.
3,432	Slate.
3,510	Dundee.

Note.—Dundee formation from 3,510 feet, top of this formation but is supposed to have as much as 300 to 400 feet of Dundee sand to drill through, although according to reports the salt water in the Pure Pool lies around 70 feet below the oil pay sand.

Contractors and drillers say their hard work is over after the drill passes through the Marshall, found around 1,100 to 1,400 feet which requires at times close to three months to get through, then the balance of the drilling into the Dundee sand requires about a month. The Reems well was completed into the pay sand of the Dundee in four days less than three months.

According to reports the field will experience great activity as soon as weather conditions are favorable, as the Pure Oil Co. is reported arranging for a busy drilling season on its extensive holdings in the two counties. This company has a rig up for No. 1 on another of the Reems' leases which is an offset to the Stillgenbauer & Russell well on the Coon lease in the NE cor. NE SE, Section 12, Chippewa Township, Isabelle County, which has been a 30-bbl. producer until recently given a shot and increased to 100 bbls. The Pure Oil Co. has also started an offset to the Chippewa Gas & Oil Co.'s big well on the Jocelyn lease and in the SW cor. SW SE, Section 12, same township. The Pure company's No. 1 Shirts, NW SW, Section 17, Greendale Township, Midland County, is drilling through the Marshall sand at last reports.

The Pure Oil Co.'s No. 1 Fred Sias, NW NE Section 17, Greendale Township, Midland County, has been delayed with a crooked hole at around 1,250 feet, and is down around 1,200 feet at No. 1 Consumers Power Co.'s No. 1 in the NE NE NE Section 20, same township.

Leonard Oil & Gas Co.'s No. 1 in the SE NE Section 11, Chippewa Township, Isabelle County, is shut down at about 1,100 feet. The Athens Oil Corp. is arranging to start drilling at No. 1 Bedford, SE NW Section 14, same township. Sias Oil & Gas Co. is getting in a rig for No. 1 on the McClintic, NW SW Section 1, same township.

The East Ohio Gas Co. of Cleveland, Ohio, is looking over the field in an effort to secure some leaseholdings close to production in the Pure Pool and vicinity.

The Pure Oil Co. Pool on a checkup shows a daily production of 1,230 bbls. from the six wells so far completed in the new field. The latest completion in the field, which was the Pure Oil Co.'s No. 1 on the D. E. Harrison, formerly reported as the Reems farm, in Greendale Township, Midland County, made its initial flow through 3,000 feet of 2-inch pipe line from the mouth of the well to the connection with the line running from the field to Mount Pleasant, where the storage is located at the loading rack, amounted to 605 bbls., but naturally the well would have made a much larger initial production had it been so that oil could have flowed steadily to tanks close to the well, for it requires quite a large amount of oil to fill a 3,000-foot 2-inch line. This well settled down to a daily production since of 510 bbls. in 24 hours. The Pure Oil Co.'s No. 1 J. B. Rayner produces 110 bbls.; No. 1 Laura Root, 46 bbls.; No. 1 George Lilly, 21 bbls., under pump; Chippewa Oil & Gas Co., No. 1 Jocelyn, 475 bbls.; Stillenbauer & Russell, Saginaw, 68 bbls.; total daily production, 1,230 bbls.

Thirteen wells are in process of drilling or rigging up along the division line of Midland-Isabelle Counties, 8 of which are under way by the Pure Oil Co. Sias Oil & Gas Co. is drilling two, Chippewa Oil & Gas Co., Leonard Oil & Gas Co., and the Rockford Oil Syndicate of Rockford, Ill., are drilling one each.

The Pure company, owner of the pipe line from the field to Mount Pleasant, which is a 2-inch line, will, according to advices, be doubled by the laying of another line of the same size and capacity from the field to the loading racks at Mount Pleasant. The new line will handle 200 bbls. an hour when completed, and a new pumping station is also under construction in the field. The Pure company has also constructed a large warehouse on its property.

KENTUCKY-TENNESSEE

(Continued from Page 64)

tempt on the C. Marsh Barrett farm, in the Jones Pool, southwest of Whitesville, is rated good for 35 bbls. initial, with No. 3, same farm, nearing the sand.

The Ohio Oil Co.'s No. 4 on the G. A. Weller 200 acres is reported good for 10 bbls.

James C. Ellis and others found a duster on the Walter Armstrong farm, about a mile northwest of the good well on the Burton farm, in the Burton Pool, which indicates the pool does not go that far northwest.

McLean County Duster

The Petroleum Co. drilled a test offsetting the good well drilled almost a year ago by Dimmick Brothers on the Ratliff farm, in fact but 400 feet east of the good well, and 3 miles southwest of Utica, and on the C. A. Page farm, and developed a rank duster at a depth

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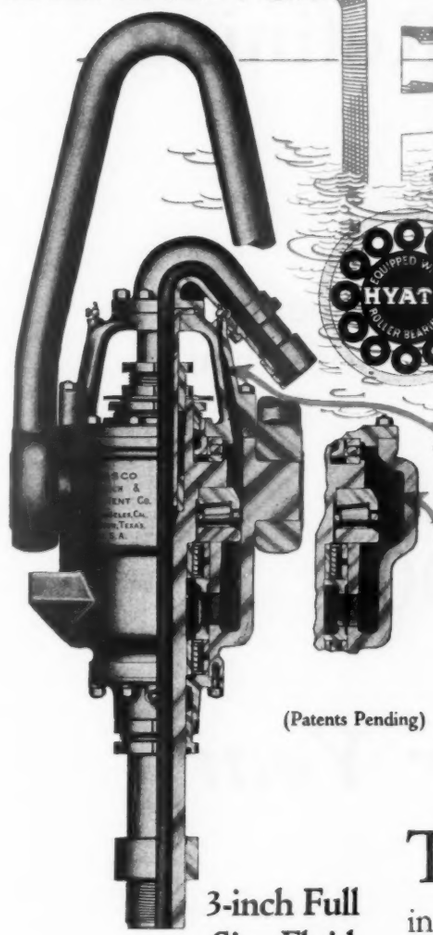

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EXPANSION CHAMBER
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3-inch Full Size Fluid Passage

THE large oil jacket on the Emsco Type B Oil Cooled Swivel is an entirely new departure in swivel design. This oil jacket provides room for ten gallons of lubricating oil, more than triple the quantity formerly used. With this large volume of lubrication and provision for dissipating the heat, the swivel will operate without running hot. The oil jacket extends completely around the bearing body, and an air chamber is provided in the gooseneck and wash pipe supporting casting with openings at the top through which the heat can be dissipated.

For further information write for Bulletin No. 31

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of 1,600 feet. The Ratliff well has now been offset on four sides and nothing found worth while, so if it has an outlet it will be a rather narrow one, but indications are no further effort will be made.

Oil Runs

Total runs made from wells served by the Illinois Pipe Line Co. in western Kentucky during February, 1929, were 172,341 bbls.

The Paragon Development Co.'s runs from Cumberland, Monroe and Clinton Counties for February, amounted to 2,656.02 bbls.; from Barren County, Kentucky, 13,775.51 bbls., while from Clay County, Tennessee, the runs amounted to 659.10 bbls., making a total for the month in both States of 17,090.63 bbls.

Cumberland Pipe Line Co.'s runs for the week closing March 2, from the eastern Kentucky fields, totaled 45,978.99 bbls.

County Clerk Sutherland of Daviess County received from the State Tax Commission the assessment on crude oil for January for Daviess County. The report shows the Ohio Oil Co. received through the Illinois Pipe Line Co., 77,612.58 bbls., valued at $124,700.11. The county's tax on this amounts to $624.21.

The Producers Pipe Line Co. received 17,434.78 bbls., valued at $28,478.57, and the tax on this amounts to $140.06.

Field Pickups

Dr. L. C. Young, of Lexington, is drilling a wildcat on the J. D. Ray farm, near the village of Dermot, on the Leitchfield Road, about 5 miles southeast of Owensboro, in Daviess County.

The Gulf Refining Co. has purchased from Forrest Page the filling station at Fifth and Ann Streets, in Owensboro, at a reported price of $18,000.

Miller and Damron, or the Creek Drilling Co., have started a test in the far western part of Daviess County, on the Dr. W. L. Tyler farm, not far from St. Joseph. Several tests have already been drilled near St. Joseph and West Louisville, but so far nothing worth while has been found.

Cumberland Petroleum Co. is in the sand on the Ivy farm which is a semi-wildcat between the Burton and Jones Pools in Daviess County, approximately a dozen miles southeast of Owensboro.

Oil operators at Owensboro are watching closely the wildcat drilled about 5 miles north of Rockport, Ind., in Spencer County, almost directly north of Owensboro, and near Rock Hill. This well was drilled by G. W. Randall and others on the Leo J. Strassell farm, and pay found at 1,280 feet. The well was put on the pump and in a very short time pumped from 25 to 30 bbls. but a valve went bad and the well was shut down until repairs were made. Six new wells will soon be started in the vicinity.

The Red Bank Gas Co., of Pittsburgh, Pa., has moved a rig on the Jack Moseley farm, 12 miles southwest of Owensboro, in Daviess County, and will spud in as soon as the tools are strung.

Flecher and others are starting a well on their lease which adjoins the Barrett lease southwest of the Ambrose Pool, and a little southwest of Taffy in Ohio County.

The Sidney Petroleum Co. got a nice gas volume in the Jones sand in the Jones Pool, southwest of Whitesville, in Daviess County, and will drill to the Barlow in hope of finding an oil producer. This company is reported drilling a well on the Hagan farm, west of Whitesville.

John G. Esslinger, president of the Esshamott Oil Co., Philadelphia, announces a drilling program of 10 wells on its Bradford lease, Barren County, Kentucky, and five on its leases in Linn County, Kansas.

CENTRAL WEST FIELDS

(Continued from Page 60)

A slight showing of gas was found in this well at 580 feet. The well of Libb and others on the William Arnold, Section 17, Huff Township, struck a fair gas volume at 580 feet, but is going deeper for oil.

In Gill Township, Sullivan County, Fred F. Bays' test on the Morris Unger farm, Section 26, is a good gas well at 555 feet.

In Patoka Township, Pike County, Bowman and others' test, 250 feet from the north line and 650 from the west line of the A. McRellip farm, in the SE of Section 24, showed a nice volume of gas and was to be piped to Winslow and Petersburg, but it is now reported to be abandoned.

Gibson County

In Washington Township, Gibson County, the Big Four Oil & Gas Co.'s No. 1 on the C. F. Sloan farm, Section 18, is reported good for 10 bbls. Mann & Huber are drilling No. 1 on the Paul White farm, same section. Texana Oil Co. is drilling No. 5 Dave Hutchinson farm, Section 13, Center Township, and the Ohio Oil Co. is drilling on the J. A. Woods farm, Section 4, Union Township.

Texana Oil Co. is drilling on the John Ford farm, Section 9, Clay Township, Pike County.

The Fortville Gas Co. drilled in a fair gas well on an unknown farm, just north of Oaklands, in Marion County. Foreman & Miller are drilling on the Harrison Gibson farm, in Center Township, Martin County. The Tawa Oil Co. is drilling on the William B. Lewis farm, Section 10, California Township, Starke County. Unknown parties are drilling on the Newton Godsey farm, between Waverly and Mooresville, in the northwest part of Morgan County.

Unknown parties are starting a test on the Adam Glenn farm, just south of Gould, in Perry County, and Roy Seibert is drilling on the Sarah C. Hammock farm, in Troy Township, same county. Delph & Chew drilled in a fair gas well on the W. S. Ham farm, in the northeast part of Hancock County.

Ben Robinson and others are drilling on the A. C. Huff farm, 4½ miles west of Troy, in Spencer County. The drill tapped the top of the Trenton at 400 feet.

State Supervisor's Report

The following information on oil and gas developments in Indiana was compiled by T. E. Kingsbury, state gas supervisor, Department of Conservation, Division of Geology, Indianapolis, Ind.:

Adams County—A well was started several weeks ago on the John Clauser farm, Section 28, Blue Creek Township, but no report of its completion has been received.

Gibson County—In Columbia Township, Section 34, the Bement Oil Co. got a dry well on the Thomas Bailey farm, at a total depth of 1,476 feet, and the Shell Petroleum Corp. got the same on the Manford Corn farm, well No. 2, in Section 15, at a depth of 1,454 feet. The Washington Oil Syndicate got a 5-bbl. well in No. 2 on the Laura Dillon lease, Section 18, Washington Township. The Texana Oil Co. is drilling the Dave Hutchinson No. 5 well, Section 13, Center Township, deeper. It is down about 1,675 feet. Fred Hillis is drilling on the R. F. Lindy farm, Washington Township. The Shell Petroleum Corp. completed a 3,000,000-foot gas well on the Ralph Ongett farm, Section 32, Columbia Township. The Big Four Oil Co. got a 10-bbl. well at 1,880 feet on the C. T. Sloan farm, Section 18, Washington Township. In Center Township, Section 32, the Texana Oil Co. is drilling on the William Volkman farm, and Mann & Huber are drilling on the Paul White farm, Section 18, Washington Township.

Greene County—Plans have been made to resume drilling on the B. A. Rose or Goose Bend farm, Section 3, Stockton Township. This well was started last fall and drilled to about 1,400 feet.

Hancock County—Delph & Chew brought in a gas well on the W. S. Ham farm.

Harrison County—It is reported the Laconia Fuel & By-Products Co. have completed some good gas wells in the southern part of the county in the Corniferous limestone.

Jay County—The well completed several weeks ago by Dee Wesner, on the Oscar Currant farm, in the southwestern part of the county, is reported to be making about 20 bbls.

La Grange County—James W. Hunt is down 650 feet with his No. 2 well on

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"TOLEDO" work benches are strong, portable benches, especially desirable for oil field operations, as they are practically indestructible.

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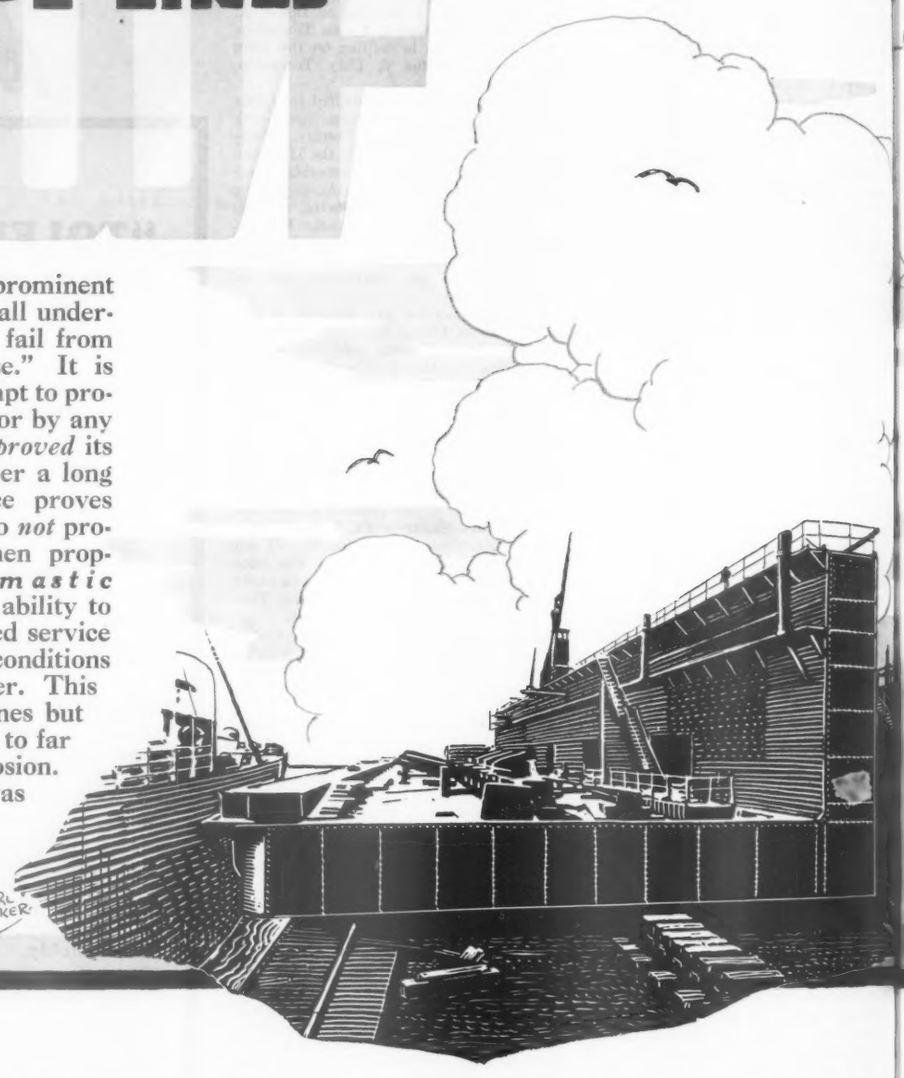
PROVEN PROTECTION FOR PIPE LINES

The Distribution Engineer of a prominent Gas Company says, "Eventually all underground pipe may be expected to fail from corrosion and from nothing else." It is poor judgment, therefore, to attempt to protect pipe lines with any material or by any method which has not definitely *proved* its ability to withstand corrosion over a long period of time. Most experience proves that most methods and coatings do *not* provide permanent protection. When properly applied, however, ***Bitumastic Enamel*** has demonstrated its ability to provide a lifetime of uninterrupted service under the most highly corrosive conditions both under ground and under water. This record covers not simply pipe lines but metal surfaces which are exposed to far more severe conditions of corrosion. ***Bitumastic*** for example, was employed for the protection of—

The famous North Shields Dry Dock



This famous pontoon dock, located at North Shields, England, was coated with ***Bitumastic Enamel*** in 1891. An inspection 28 years later showed the *original* coating to be in perfect condition and the metal surfaces so adequately protected against corrosion that not a single foot of it had to be renewed. It should be noted that these surfaces were alternately immersed in salt water and exposed to air throughout this entire period—conditions which ordinarily would cause corrosion at a very rapid rate. This performance is claimed to constitute a world's record in the anti-corrosive protection of steel.

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Why Experiment with Pipe Protection when You Have Such Proofs as These?

The Interstate Line

A 22" line laid by the Interstate Natural Gas Company from Monroe, La., to Baton Rouge. 85 miles of the original line, also the extension from Destrehan to New Orleans, protected with ***Bitumastic Enamel.*** *Two new loops now under construction are receiving the same protection.*

It may pay to experiment on experimental lines but on the world's largest gas lines—involving an investment of many millions of dollars—the engineers have chosen a coating which has definitely proved its worth. No other paint or coating has a history which can be compared with ***Bitumastic's*** record and no other, therefore, can be judged to be as safe. A complete history of ***Bitumastic*** performance in all fields—particularly the pipe line field—will be furnished on request.

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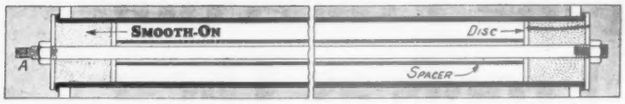
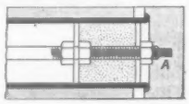


BAGGED, BLISTERED OR LEAKY TUBES OR FLUES – Blank them off with

SMOOTH-ON No. 1



THROUGH lack of a renewal tube or because shut-down for complete renewal is not at the time permissible, a tube or flue that has gone bad somewhere between the ends may have to be blanked off temporarily. In such an emergency, the loss of the small amount of heating surface is of no consequence.

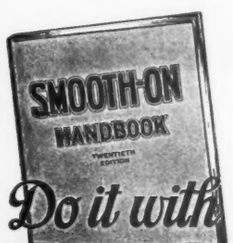
The form of tube stopper shown can be depended upon to stay tight under any temperature and pressure and to check the leakage and danger *completely* until the tube is renewed.

The repair requires only readily obtainable material —a rod with threaded ends and nuts, an inner pipe fitting over the rod and acting as a spacer, and discs cut from plate metal to slide over the rod and fit the tube. The variation shown in the second illustration dispenses with the spacer. The outer discs may go over or fit into the tube ends. A flat cut onto one end of the rod (A) and held by a wrench will prevent twisting of the rod in final tightening.

After placing the rod and two inner discs, the cups so formed are packed tightly with Smooth-On No. 1, and the outer discs are drawn down by the nuts to force the Smooth-On into full contact. The expansion of the Smooth-On in hardening makes the seal absolutely tight until chipped out in the final tube renewal. The plugs can be placed while the fire is banked and will be ready for service before pressure is restored.

This type of stopper is also entirely practical for straight tubes in water or air heaters, interchangers, condensers, etc.

Get Smooth-On No. 1 in 1 or 5-lb. can or 25, 50 or 100-lb. keg from your nearest dealer or if necessary direct from us.



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3-21-29

the Ivo Chrystler farm, near LaGrange, Clay Township. Drilling has been suspended during the winter but will be resumed soon.

Marion County—The Fortville Gas Co. completed a gas well just north of Oaklandon, in the northeast corner of the county. The well had a stronger pressure than the average in that region.

Martin County—Foreman & Miller are drilling on the Harrison Gibson farm, in Center Township. At the last report they were down more than 500 feet.

Morgan County—It is reported that a well is being drilled on Newton Godsey farm in the northeast part of the county between Mooresville and Waverly.

Perry County—A rig has been moved between the Adam Glenn farm just south of Gould, Tobin Township. Roy Seibert, who started a well last fall on the Sarah C. Hammock farm, Troy Township, but had to suspend operations when only about 100 feet down, plans to resume operations as soon as weather conditions permit.

Pike County—Perry Andrews, drilling No. 9 on the Amos Atkinson farm, got a dry hole at 1,387 feet. A 1,000,000-foot gas well was completed by the Bement Gas Co. on the McKillip farm, Patoka Township, 7 miles south of Petersburg.

Spencer County

Spencer County—The Packard Oil Co. completed No. 3 on the Arthur Ray farm, Section 11, Huff Township. It is reported to be the best well on the lease. No. 1, completed last November, made 12 bbls. oil and 200,000 feet of gas; No. 2, completed in January, made 10 bbls. and 250,000 feet of gas. In these wells production was encountered at 430 feet, but in No. 3 it was 700 feet. No. 4 on this farm has been started. This company has completed a dry well on the F. W. Grass farm, southwest of the Ray farm. Ben Robinson and others are drilling in this township on the A. C. Huff farm, 4½ miles west of Troy. Five miles north of Rockport, C. W. Randall and others brought in what is reported to be a good oil well for that region on the Leo Strassell farm. It has not been shot but 20 bbls. of oil were bailed without lowering the level. The Universal Oil Co. brought in a dry well on the George Ludwig farm, Section 4, Clay Township. The well encountered water at 1,220 feet. Some gas was obtained at 580 feet.

Starke County—The Tawa Oil Co. has started a test on the William B. Lewis farm, Section 10, California Township, 5 miles south of Knox.

Steuben County—The well on the Peter Snowberger farm, in the southwest part of Steuben Township is being drilled deeper. In November it was shot 57 feet in the Trenton, and it was reported that oil stood 150 feet in the casing.

Sullivan County—A well on the J. Harris farm, Section 2, Turman Township, which encountered water at 2,360 feet, was plugged back to a gas bearing sand and made a gas well. Fred Bays started a deep test on the Morris Unger farm, Section 26, Gill Township, but encountered a strong flow of gas at 555 feet. The well was connected with the gas line for the winter, but the plan is to continue drilling when the demand for gas during the cold months has passed.

Vanderburg County—Plans are being made to resume drilling on the John Wills farm, Section 32, Armstrong Township, after a shut-down of several weeks. The well is now 1,585 feet deep.

ILLINOIS

Only one completion was reported from the Illinois Fields, and that was a dry hole drilled by the Mount Carmel Oil Co., No. 8 in the SE cor. of the F. M. Leek farm, in the SW of Section 1, Wabash Township, Wabash County, at a depth from 1,552 to 1,570 feet.

Very little development work is under way in any part of Illinois, and the only promising looking areas at this time are the Dupo Oil Field, in St. Clair County, in the western part of the State, and in the Harrisburg area of Saline County, in the southwestern portion. The Dupo Field in St. Clair County, is where the Ohio Oil Co. secured a couple of nice wells some time ago that started at around 100 to 200 bbls. from what termed the Kimmswick formation, wh is the Trenton lime. The Dupo Field h just been looked over by the geolog department of Illinois and a report m of that field by Alfred H. Bell of t State Geological Survey, which is No. of the Press Bulletin series, was r leased on March 2, 1929. The drilling the Dupo Field is similar to that in t Waterloo Field to the south, where large number of wells were drilled a fe years ago, the crude being found in t Trenton lime rock.

Two Companies Will Drill 700 Wells at Bradford This Yea

OIL CITY, Pa., Mar. 16.—The grea est drilling program of any one compan in the history of the Bradford oil fie is to be put in operation this year by t South Penn Oil Co., according to an of cial announcement of the company.

Five hundred wells will be put down b the concern in the Bradford Field. Th compares with 300 completions by th company in the Bradford Field durin 1928 and nearly 400 during 1927, whic was the previous high water mark. I order to complete the drilling progra of the concern 60 strings of drilling too will be kept in operation in the Bradfor fields.

Announcement was also made that th Healey Petroleum Corp. has announce a drilling program of 200 wells in th Bradford Field this year.

The South Penn Oil Co. also announce that it has completed a deal for the pur chase of the S. R. Dresser office an warehouse building in Bradford. It wil be used as the permanent Bradford hom of the South Penn Oil Co. It will be oc cupied by the South Penn within the next four months. The purchase of thi building was made necessary by the greatly increased business of the South Penn Oil Co. in the Bradford district.

The officers of the S. R. Dresser Manufacturing Co. in Bradford will be move to the plant of that concern until the completion of a new office building by that company.

The cost of drilling a well in the Bradford Field averages $3,500. Therefore the program of the South Penn Oil Co. and the Healey Petroleum Co., calling for 700 completions, will mean the investment in drilling by these two companies of $2,450,000 this year. At the same time there will be no let up in the drilling programs of many other companies operating in the Bradford and Allegany Fields, and 1929 promises to be the busiest year in the field since the early 80's. The Bradford Field reached its production peak in 1881 but the demand for Pennsylvania grade crude, together with the fact that the Bradford-Allegany territory has been going through a revival of operations inspired by success in flooding the sands with water, have made that the busiest oil area in the United States, which has redounded to the benefit of supply dealers, truckers, teaming contractors, drillers and lease operatives.

STOP DRILLING IN MORAVIA

The drilling operations of the Kolin Petroleum Co. in Moravia are to be abandoned, according to press reports. The area which they have covered is said to have produced no results in making oil production commercially possible. The company's refinery has been leased to another Czechoslovakian petroleum company which has purchased the transportation equipment.

RUMANIA'S NEW LAW

The proposed new Rumanian oil law abolishes the system of nontransferable oil shares and also provides for the reparation of the state oil fields among the various competitors on the basis of financial and technical capacity, instead of political considerations as under the former regime. This means that foreign capital will no longer be excluded.

KILL FIRE WHILE IT IS YOUNG

At all strategic points... FOAMITE Fire Equipment

Cracking plant, loading racks, receiving house, can filling department, stills, look boxes — at these points there is always a chance for fire.

At such places you should have FOAMITE Protection in one form or another. In certain places 2½ or 5 gallon FOAMITE Extinguishers will be sufficient. But every extinguisher has its limitations. For tougher fires that get a real start you need 40-gallon FOAMITE Engines located at strategic points.

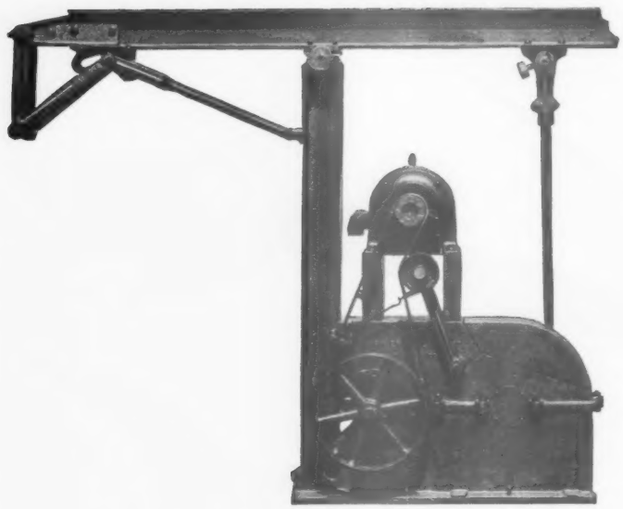
The 40-gallon FOAMITE engine generates 300 gallons of *Firefoam* and has an effective range of about 60 feet. It is an important step in complete fire protection for any property. Its capacity and range mean great effectiveness on the fire that has had too big a start for the hand extinguishers!

A free demonstration of this 40-gallon FOAMITE Engine will gladly be arranged by representatives located at points convenient to all principal oil producing and refining centers. Will you name a date? American-LaFrance and Foamite Corporation, Engineers and Manufacturers, Dept. F-26, Elmira, New York.

AMERICAN-LAFRANCE AND FOAMITE PROTECTION

A Complete Engineering Service

For Extinguishing Fires



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Can be used to pump from one to three wells.

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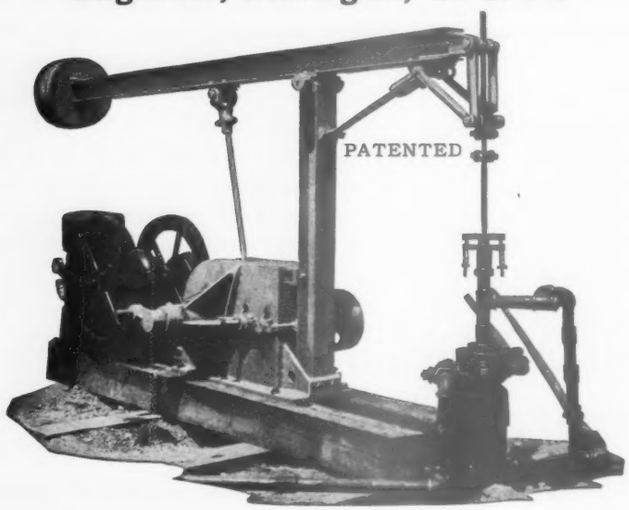

FURTHER REDUCTIONS MADE IN THE TANK WAGON PRICES IN FEBRUARY

Reductions in the tank wagon and station gasoline prices over the United States during February added to the substantial setback in the retail market witnessed during January and the average net tank wagon gasoline price in The Oil and Gas Journal's 50 cities on March 1 was reduced to 14.88 cents, just .67 cent higher than the record low on December 1, 1928. Compared to the average price on the first of the previous month, the March 1 average was about one-fourth cent lower. There were but few general reductions over the country during February, which contrasted with conditions during January. The reductions which were posted in February were scattered and were made to take care of local conditions.

A year ago the average was shown to be 14.71 cents and with this as a basis an improvement of .17 cent is shown. Compared to two years ago when the average was 17.00 cents, this year's price represents a loss of 2.12 cents or approximately $820,000 per day.

(Tank Wagon Prices on Next Page)

GASOLINE PRICES EFFECTIVE MARCH 1, 1929

Table showing gasoline tank wagon prices as of March 1, 1929, exclusive of taxes, in 50 representative cities, including the amount and the date of changes since February 1, 1929. High and low prices and state taxes also given.

	Feb. 1	Price changes Feb. 4	Feb. 7	Feb. 14	Prices Mar. 1	High and Low 1928		High and Low 1927		Tax Mar. 1 1929
Birmingham, Ala.	16.0	15.0	16.0	14.0	14.0	18.0	14.0	18.0	14.0	5.0
Phoenix, Ariz.	14.0	....	....	....	14.0	18.0	14.0	19.0	16.0	4.0
Little Rock, Ark.	13.0	....	....	....	13.0	16.0	11.0	15.0	11.0	5.0
San Francisco, Calif.	14.0	....	15 12.0	....	12.0	14.0	14.0	14.0	9.0	3.0
Denver, Colo.	16.0	....	....	....	‡14.0	16.0	13.0	18.0	13.0	3.0
Hartford, Conn.	16.0	....	....	....	16.0	18.0	16.0	22.0	18.0	2.0
Dover, Del.	15.0	....	....	....	15.0	18.0	16.0	19.0	16.0	3.0
Jacksonville, Fla.	18.0	....	4 17.0	....	17.0	18.0	13.0	16.0	10.0	5.0
Atlanta, Ga.	18.0	....	4 17.0	....	17.0	18.0	13.0	18.0	10.0	4.0
Boise, Idaho	19.5	....	....	....	19.5	20.5	19.5	22.5	19.5	4.0
Peoria, Ill.	14.2	....	....	....	14.2	15.2	9.0	18.2	9.0	...
Chicago, Ill.	14.0	....	....	....	14.0	15.0	14.0	17.0	14.0	...
Indianapolis, Ind.	14.2	....	....	....	14.2	15.2	10.2	18.2	10.2	3.0
Des Moines, Iowa	14.5	....	....	....	14.5	15.5	11.9	16.0	9.9	2.0
Wichita, Kans.	12.8	....	....	....	12.8	13.8	10.8	15.8	10.8	2.0
Louisville, Ky.	16.0	....	4 15.0	....	15.0	16.0	13.0	17.0	13.0	5.0
New Orleans, La.	11.5	....	....	....	11.5	14.5	10.5	14.5	11.5	*3.0
Augusta, Me.	16.0	....	....	....	16.0	18.0	17.0	22.0	17.0	4.0
Baltimore, Md.	14.0	....	....	....	14.0	16.0	15.0	19.0	16.0	4.0
Springfield, Mass.	16.0	....	....	....	16.0	18.0	16.0	22.0	12.0	...
Detroit, Mich.	14.8	....	....	....	14.8	15.8	11.8	18.8	11.8	3.0
Duluth, Minn.	15.5	....	....	....	15.5	16.5	12.5	19.5	12.5	2.0
Natchez, Miss.	15.0	4 14.0	7 15.0	....	15.0	16.5	12.5	15.5	12.5	5.0
Kansas City, Mo.	13.9	....	....	....	13.9	14.9	10.9	17.9	10.9	*3.0
Helena, Mont.	19.5	....	....	....	19.5	20.5	19.5	22.0	19.5	3.0
Omaha, Neb.	14.25	....	....	....	14.25	15.25	13.25	14.25	12.25	2.0
Reno, Nev.	18.0	....	....	....	18.0	18.0	18.0	18.0	15.0	4.0
Newark, N. J.	14.0	....	....	....	14.0	16.0	15.0	19.0	16.0	2.0
Albuquerque, N. Mex.	17.0	....	....	....	17.0	17.0	14.0	20.0	16.0	5.0
New York, N. Y.	16.0	....	....	....	16.0	18.0	17.0	22.0	17.0	...
Charlotte, N. C.	14.0	....	....	....	14.0	17.0	15.0	19.0	16.0	4.0
Fargo, N. Dak.	16.9	....	....	....	16.9	17.0	12.0	20.0	12.0	2.0
Cleveland, Ohio	15.0	....	5 14.0	....	14.0	16.0	14.0	19.0	14.0	3.0
Tulsa, Okla.	14.0	....	....	....	14.0	14.0	10.0	15.0	10.0	3.0
Portland, Ore.	14.5	....	15 12.5	....	12.5	14.5	14.5	14.5	11.0	3.0
Philadelphia, Pa.	15.0	....	....	....	15.0	18.0	15.0	19.0	12.0	†2.0
Providence, R. I.	16.0	....	....	....	16.0	19.0	17.0	22.0	17.0	3.0
Charleston, S. C.	14.0	....	....	....	14.0	17.0	15.0	19.0	15.0	5.0
Huron, S. Dak.	15.3	....	....	....	15.3	16.3	14.5	19.5	11.5	4.0
Memphis, Tenn.	13.0	....	17 15.0	....	15.0	16.0	12.0	15.0	10.0	3.0
Dallas, Tex.	14.0	....	....	....	14.0	14.0	9.0	13.0	10.0	2.0
Salt Lake City, Utah	17.5	....	....	....	17.5	18.5	16.5	20.5	16.5	3.5
Burlington, Vt.	16.0	....	....	....	15.0	18.0	17.0	22.0	17.0	3.0
Norfolk, Va.	14.0	....	....	....	14.0	16.0	14.0	18.0	16.0	5.0
Washington, D. C.	14.0	....	....	....	14.0	16.0	15.0	19.0	16.0	2.0
Charleston, W. Va.	14.0	....	....	....	14.0	17.0	15.0	18.0	16.0	4.0
Milwaukee, Wis.	14.1	....	....	....	14.1	15.1	13.1	18.1	13.1	2.0
Casper, Wyo.	15.0	....	....	....	15.0	16.0	14.0	18.0	14.0	3.0
Seattle, Wash.	14.5	....	15 12.5	....	12.5	14.5	14.5	14.5	11.0	2.0
Minneapolis, Minn.	15.2	....	....	....	15.2	16.2	11.0	15.2	11.1	2.0
Average price	15.11	....	....	....	14.88	16.54	13.54	18.15	13.55	3.02

*State tax 2 cents, remainder city tax. †Paid by dealer. ‡March 1.

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You can easily avoid this and this

by equipping your leases with our CORROSION RESISTING TANKS or by letting us make your present tanks CORROSION RESISTING!

There is no way to measure the devastation caused by the destructive force of corrosive gases in the West Texas Oil field sulphur gas district. These two pictures were taken of tanks that had been in use less than one year's time. We have seen cases just as bad as these where tanks had not been in use even 6 months. And the pity of it all is that this destruction is so unnecessary and could be so easily avoided.

Our Corrosion Resisting Tanks come to you already treated to withstand the electrolytic action of the gases in the West Texas sulphur gas district.

We have made a 5-year intensive study of the problems of protecting tanks, pipe lines and all material subject to corrosion.

We have devloped paints to correct all corrosive conditions. We have worked out the scientifically correct manner of applying these paints and we have the complete equipment for properly doing the work.

All paints are good—but no paint will give satisfaction unless properly applied to a clean surface.

Unless the surface of the tank is correctly cleaned and treated, the electrolytic action, which pits and destroys the surface of the tank, goes right on with its devastating work no matter how good the paint or how well it is applied.

This is the reason that we advise all who use even our specially prepared "corrosion resisting" paints to allow our own operators to do the cleaning and applying—for only in this manner are we enabled to guarantee results.

Our engineering department is probably better informed on corrosion problems than any other organization in the field and is at your service—we will be glad to study your problems and make a report on corrosive conditions in any field and submit a report covering our recommendations.

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We maintain a trained service department for the benefit of tank users in our territory. This service is at your disposal at any time and our engineers will be glad to show you how to overcome your tank troubles.

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SULGASPRU Corrosion Resisting Paints for houses and tanks in the gas district.
UNDERCO seals and protects your pipe line.

INTEREST IN PLANS FOR AIRPORTS STIRRED BY LEHIGH COMPETITION

Interest in airport development, an important problem in the growth of commercial air transportation, has received fresh stimulus through announcement of the Lehigh airports competition, which will close in November, 1929. Prizes amounting to $10,000 have been offered by the Lehigh Portland Cement Co. for winning designs of air ports.

Col. Harry H. Blee of the Airports and Airways Section of the Department of Commerce, said recently that about 1,000 airports were in various stages of actual development throughout the United States and that approximately 1,000 other airports were under consideration by communities, air transport companies, and other interested organizations.

In Europe, the well established airports are revamping their layouts; Croydon has scrapped a $600,000 investment and is spending over $1,000,000 to correct deficiencies in the earlier arrangement and equipment of the port and to provide facilities which it is hoped will meet the requirements for several years into the future. Airport development is in its infancy throughout the world, and while Europe has so far made the greatest advances in this field, America, unhampered by precedent, can be expected to outstrip Europe within the next few years in airport design and construction and in growth of its commercial traffic.

Three hundred million dollars is expected to be spent in the next year in this country for airport construction.

May Guide in Spending Millions

The Lehigh airports competition is characterized as a serious endeavor to contribute something of practical value as a guide in the expenditure of the millions of dollars for ground facilities in conjunction with commercial aeronautics.

The competition program was formulated by a program committee of nationally known experts, headed by Harvey Wiley Corbett, one of the country's foremost architects. The program committee consisted of four sections of architecture, engineering, city planning, and aeronautics. With Mr. Corbett on the architectural section are Raymond Hood, co-designer of the Chicago Tribune tower, the American Radiator Buildings in New York and London, and other world famous structures; Prof. William A. Boring, dean of the school of architecture, Columbia University; Francis Keally, professional advisor for the competition and an architect who spent last summer flying through Europe making a special study of airports; and Parker Morse Hooper, editor of The Architectural Forum.

The engineering section, headed by Morris Knowles, noted civil engineer and city planning expert and including Francis Lee Stuart, former vice president of the A.S.C.E.; Gavin Hadden, C.E., Harold M. Lewis of the Regional Plan of New York and its environs, and Col. Willard Chevalier, managing director of Engineering News-Record, are guiding the policies of the competition with respect to its engineering problems.

Ford Heads City Planning Section

George B. Ford, city planner, is chairman of the Civic and City Planning section, in which work he has been assisted by E. P. Goodrich, now in China making a study of engineering problems, including the development of airports in conjunction with the expansion of Chinese transportation systems. Fred C. McLaughlin, mayor of White Plains, N. Y., president of the New York State Conference of Mayors and of the Westchester County Planning Federation, represents the interests of municipal authorities in the competition, and Harold Buttenheim, editor of American City, represents city engineers, chambers of commerce, and similar bodies concerned with this problem.

The Aeronautic Section of the program committee is headed by Dr. George W. Lewis, director of research of the National Advisory Counsel for Aeronautics, and includes such experts as Col. Harry H. Blee of the Department of Commerce; Porter Adams, executive secretary and past president of the National Aeronautic Association; Maj. John Berry, manager of the Cleveland Municipal Airport; L. K. Bell, secretary of the Aeronautical Chamber of Commerce; Col. Paul Henderson, vice president of the Transcontinental Air Transport and former Assistant Postmaster General in charge of Air Mail Service; Charles S. Jones, president of the Curtiss Flying Service; Ernest Jones, aeronautics expert of the Department of Commerce; and Harry Schwartzschild, editor of Airports. These men and their associates on the program committee had to determine what limitations and what requirements should be incorporated in the competition program to create a group of designers which should be of practical as well as inspirational value to municipalities and air transport companies interested in the development of modern airports.

Must Resemble Railroad Terminal

The modern airport must resemble in many respects a well-equipped railroad terminal. It must provide a passenger station with ticket offices, baggage rooms, waiting rooms, public restaurant, toilets, and other facilities. It should provide an immigration and customs office, a post-office, and adequate facilities for handling express and mail. There must be administration offices, not only for the various aerial transport lines which utilize the field, but for the control of flying operations at and adjacent to the port. There must be quarters for the field and flying personnel, and probably a hotel for transients as well as these permanent guests. There must be hangars for the care of planes, machine shop, fire station, gasoline and oil filling stations, an extensive and elaborate lighting system, and many other service facilities required for the care and operation of planes.

A feature which the competition has revealed is the necessity for developing other uses and other activities in conjunction with the airport. At Croydon Field in England, at the Templehof Field in Berlin, and at the Littorio airport at Rome, and other European airports, thousands of visitors come to the field daily or during week-ends to watch planes arrive and depart. These come in a holiday mood and they patronize the restaurants and amusement concessions which sprang up. The modern airport must expect to derive part of its income from concessions of this type, a feature which is by no means impracticable, because there is always the need for marginal strips around the borders of flying fields which will be free from tall buildings in order to permit planes to glide gently toward the landing area.

AVERAGE TANK WAGON PRICE IN 50 CITIES

(Exclusive of Tax)

March 1, 1927	17.007
April 1	16.160
May 1	15.320
June 1	14.720
July 1	14.86
August 1	14.89
September 1	14.62
October 1	14.39
November 1	14.32
December 1	14.21
January 1, 1928	14.29
February 1	14.33
March 1	14.71
April 1	14.81
May 1	15.02
June 1	15.22
July 1	15.29
August 1	15.74
September 1	16.04
October 1	16.34
November 1	16.28
December 1	15.98
January 1, 1929	16.00
February 1	15.11
March 1	14.88

WORLD NEWS STORIES OF THE KOHLER ELECTRIC PLANT—No. 1

"If they'll run standing on their HEADS we'll take 'em"

THOSE were not the exact words, but they scarcely exaggerate the Navy's requirements. More literally the demand was: "Must operate successfully and without damage on a moving platform inclining up to an angle of 45° sidewise and 30° lengthwise."

The Navy wanted small electric-generating plants for destroyers and mine-layers, the pitchingest, rollingest craft that ever pulled the whiskers of old Father Neptune. They wanted them for *emergency wireless use*, so be sure they wanted good ones.

A neat little 800-watt Kohler Electric Plant stood up manfully to the bucking-platform test. Its twin did a one-year trick on the destroyer Decatur. And now *one hundred and twelve* of these plants are on their way to Brooklyn Navy Yard and Mare Island—to stand by the Navy in time of peril.

First choice in the oil fields

Everywhere, as in the Navy or, by the way, with Byrd in the Antarctic, Kohler plants are picked by engineers who want the very best of electrical service.

Hundreds of these efficient machines are at work in the oil fields—lighting rigs, shops, and offices, traveling as portable outfits from job to job, and supplying auxiliary power for drill presses, pipe-cutting machines, etc. Please mail the coupon for detailed information about models for every purpose, ranging from 800 watts to 10 K. W.

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You cannot judge pipe by looking at it. All steel pipe looks about the same. And you cannot afford to inspect and analyze every piece of pipe you buy or install.

But you can make sure that it's Republic Steel Pipe. Then you have the assurance of strength, uniformity and durability. Then you know that every length has been made to conform to rigid specifications . . . has passed severe tests and inspections before it is ever placed on the market. Then you can not only expect, but you can be certain of satisfactory pipe service.

The name Republic on steel pipe is a positive answer to the question of dependability . . . insurance of quality piping in your oil or gas lines.

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PIPE & CASING

PRESIDENT HOOVER'S BAN ON OIL PERMITS

(Continued from Page 30)

policy at present. When he left the President he stated he was convinced that fair treatment would be accorded to those who have made investments under permits to drill for oil issued to them by the Department of the Interior in accordance with the general leasing act.

Senator Walsh stated he was not prepared to appraise the full effect of the President's policy on his state and if it works for serious injury to the state he will be heard from later. Whether there will be any court action to contest the exercise of discretionary power by the President in these cases is problematical, but it does not seem likely such action will be taken. There is nothing new in this power exercised by the President.

All those prospectors who are found to have made "reasonable" expenditures in the prosecution of work under prospecting permits will be granted leases under the terms of the general leasing act but no adjacent lands will be leased.

It is not the principle involved in the President's act that Senator Walsh objects to beyond the fact that it might adversely affect the interests of the state of Montana and of his constituents who would wish to take advantage of the general leasing act. He approves the policy of conservation but as the oil lands of most other states have gone into private hands he feels that his and some other states are being discriminated against by the force of circumstances. The extensive government holdings in Montana and Wyoming for instance are tax free so that these states will derive no income from them. Coming into private ownership these lands would act not only to increase taxation returns but it might also tend to introduce the benefits accompanying an active oil industry.

Statement by President

Following up the policy announced favoring oil conservation President Hoover declared that careful investigation of the 20,000 existing permits for prospecting on the public domain is under way to ascertain whether some of them should be revoked. In this statement the President says:

"Not only do we propose to stop the issue of development permits over public domain and other lands in control of the Government, which permits constitute the first step in the leasing of oil resources, but Secretary Wilbur proposes to review all outstanding permits to determine their status.

"Where holders are complying with the law, they need have no anxiety as to retrospective action, but some 34,000 permits for oil exploration by drilling have been issued since the leasing law was passed in President Wilson's administration.

"Of these some 20,000 are outstanding at the present time. Under these permits drilling must proceed in definite stages under time limits. It is obvious that no large proportion of 20,000 oil wells are being drilled on lands under these permits. Thus, many persons have not complied with the requirements of the law and in effect have abandoned their rights.

"I have approved the recommendation of Secretary Wilbur to appoint a departmental board representing the different bureaus interested, which will review the whole situation. Being fairly familiar with the sentiment of our western states, I can at once refute the statement that the people of the West object to conservation of oil resources. They know that there is a limit to oil supplies and that the time will come when they and the nation will need this oil much more than it is needed now. There are no half measures in conservation of oil. The Government must cease to alienate its oil lands if we are to have conservation."

Among the callers at the White House was Ralph Arnold, of New York and Los Angeles, who told the President his conservation policy had received a favorable reaction. Mark L. Requa has seen a good deal of President Hoover since he entered the White House.

OIL INDUSTRY LEADERS TO ADDRESS ENGINEERS

Leaders in the petroleum industry will be among the speakers at the spring convention of the American Society of Civil Engineers to be held in Dallas, Tex., April 24, 25 and 26. These will include W. S. Farish, president of the Humble Oil & Refining Co., Houston, Tex.; and J. Edgar Pew, vice president of the Sun Oil Co., Dallas, former president of the American Petroleum Institute. Mr. Pew is to discuss oil and gas developments in the Southwest. E. C. Kincade, vice president of the Gulf Pipe Line Co., Houston, will tell about the great oil and gas pipe line systems of the Southwest.

"The Story of Petroleum," presented in a moving picture, will feature a dinner on the first night of the convention. At the same dinner R. B. Whitehead, of Dallas, chief geologist of the Atlantic Producing Co., will speak on "Geophysics of Petroleum and Natural Gas." Engineers from many parts of the United States and several foreign countries will attend the convention.

MAGNOLIA P. L. STATEMENT

The Magnolia Petroleum Co.'s pipe line department reports crude runs from Oklahoma and Kansas fields in February of 2,056,003 bbls., daily average 73,429 bbls.; shipments, 1,839,486 bbls., daily average 65,696 bbls., Stocks at close of month, 9,781,000 bbls.; an increase of 232,963 bbls. over the stocks at the close of January, a daily average increase of 8,320 bbls.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 40)

COKE COUNTY

Cates & Dennis' No. 1 Mimms, 2,500 ft. S and 330 ft. E of NW cor. Sec. 47, Blk. 4, T.&P. Sur. ..... Shut down 1,585 ft.

Cates & Dennis' No. 2 Mimms, 2,340 ft. N and W SE cor. Sec. 8, Blk. W, T.&P. Sur. ..... Spudded and shut down.

Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft. ..... Shut down 2,860 ft.

Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor. Sec. 272, Blk. 1-A, H.&T.C. ..... Underreaming 3,212 ft.

CONCHO COUNTY

Duffey & Silk's No. 1 Lovelace and Lockett, 1,050 ft. N and 640 ft. W of SE cor. Sec. 66, Blk. 70, H.&T.C. Sur. ..... Drlg. 876 ft.

Exploration Co.'s No. 2 Hartgrove, 900 ft. S and 985 ft. E of NW cor. Johann Scheuch Sur. No. 240 ..... Rig.

Lloyd Jones Co.'s No. 1 Jones, 420 ft. S and 15 ft. E of NW cor. John G. Reh Sur. No. 1,878 ..... Shut down 150 ft.

CRANE COUNTY

Gulf Prod. Co.'s No. 6 Waddell, C NW NE Sec. 12, Blk. B-25 ..... Top salt 1,825 ft.; show oil and gas 3,275-85 ft.; shut down 3,363 ft.; 1,200 ft. oil in hole.

CROCKETT COUNTY

Eppenaur et al's No. 2 Noelke, 500 ft. N and 1,250 ft. E of SE cor. Sec. 64, Blk. 1, I.&G.N.R.R. Sur. ..... Spudded and shut down.

Lewis & Daniels' No. 1 Pecos River Bed, 19 yards S and 37 degrees E of NW cor. Sec. 33, Blk. 1, I.&G.N. Sur.. Drlg. 595 ft.

W. W. Donnelly & Young's No. 1 Shannon, SW SW SE Sec. 42, Blk. BB, T.C.R.A. Sur. ..... Drlg. 500 ft.

W. W. Donnelly & Young's No. 1 Middlebuster, C Sec. 11, Blk. 9, D.&S.E. Sur. ..... 7,000,000 ft. gas at 1,663 ft.; shut down 1,690 ft.; small oil show.

Moncrief, Donnelly et al's No. 2 Todd, C Sec. 53, Blk. UV, G.C.&S.F. Sur. ..... Set 10-in. casing 1,355 ft.

Moncrief, Donnelly et al's No. 3 Todd, C Sec. 55, Blk. UV, G.C.&S.F. Sur. ..... Spudded and shut down.

Tidal Oil Co.'s No. 1 Weathered, 5,055 ft. SW of NE line and 330 ft. SE of NW line Sec. 30, Blk. 31, H.&T.C.R.R. ..... Top salt 485 ft.; set 10-in. casing 820 ft.; drlg. 1,075 ft.

J. D. Wheeler's No. 1 State Land, 744 ft. S and 1,250 ft. E from SE cor. Sec. 73, Blk. 1, I.&G.N.R.R. Sur., but in Vacancy Strip ..... Top salt 492 ft.; set 8-in. casing 595 ft.

CULBERSON COUNTY

Deep Rock Oil Co. et als' No. 1 Kloh-Rumsey, 800 ft. S and 1,422 ft. E of NW cor. Sec. 33, Blk. 59, Twp. 7, T.&P.R.R. Sur. ..... Running 10-in. casing 300 ft. and shut down.

Hickey & Stiver's No. 1 C. O. Finley, 660 ft. N and 1,980 ft. W Sec. 20, Blk. 82 ..... Hole full water; small oil show 1,331 ft.; pipe set 1,418 ft.; shut down 1,820 ft. for drilling lime.

W. S. Hillyer's No. 1 McGregor, C NW Sec. 14, Blk. 81.. Shut down 720 ft. for water.

Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E Sec. 1, Blk. 97, Public School Land ..... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; shut down 1,800 ft. for funds.

FISHER COUNTY

Bickerstaff et al's No. 1 McWhirter, 2,640 ft. E and 150 ft. N of SW cor. of Sec. 295, Blk. 2, H.&T.C. Sur. .... Shut down 2,000 ft. for orders.

Cranfill & Reynolds' No. 1 Brown, 330 ft. S and E of NW cor. Sec. 4, W. E. Richardson Sur. ..... Swabbed 58 bbls. 3,192-96 ft.

Cranfill & Reynolds' No. 2 Willingham, 1,980 ft. S and 2,310 ft. W of NE cor. Sec. 207, B.B.B.&C.R.R. Sur. .. Drlg. 2,540 ft.

Cranfill & Reynolds' No. 1 Fleming, 1,980 ft. S and 2,310 ft. E of NW cor. Sec. 207, B.B.B.&C.R.R. .... Oil show 2,905 ft.; set 6-in. 3,160 ft.

Dunnegan Bros.' No. 1 T. Henry, 330 ft. N and E of SE cor. Sec. 21, George W. Burdett Sur. No. 322, but in Sec. 4, Robert Hibbett Sur. No. 331 ..... Drlg. 2,442 ft.

Gillman-McMurray & French's No. 1 Cleveland, 781 ft. N and 1,336 ft. W of SE cor. Sec. 116, Blk. 2, H.&T.C. Sur. ..... Set 8-in. casing 685 ft.; drlg. 1,935 ft.

Landreth Prod. Corp.'s No. 1 Cooper, 440 ft. SE of NE cor. NW Sec. 115, Blk. 1, H.&T.C. Sur. ..... Drlg. 2,885 ft.; show oil 2,760-70

Mesa Oil Co.'s No. 1 Griffin, 849 ft. N and 465 ft. E of NE cor. Sec. 20, School Land ..... Drlg. 1,065 ft.

Roeser & Pendleton's No. 1 Haugh, 440 ft. S and 1,320 ft. E of NW cor. of SW of Sec. 191, B.B.B.&C.R.R. Sur. ..... Drlg. 750 ft.

Texas-Phillips' No. 1 Hall, 330 ft. N and W of SE cor. Sec. 6, Blk. 20 ..... Drlg. 910 ft.

White Eagle Oil & Ref. Co.'s No. 1 Hughes, 4,942 ft. S and 560 ft. W of NE cor. Cosby Sur. 220 ..... Spud.

GAINES COUNTY

Pure Oil Co.'s No. 1 A. A. Williamson, 1,650 ft. S and 330 ft. W of NE cor. Sec. 110, Blk. H, D.&W.R.R. .. Top salt 2,339 ft.; coring 3,887 ft., salt and brown shale.

GARZA COUNTY

Emerald Oil Co.'s No. 4 J. M. Boren, 330 ft. S and W NE cor. Sec. 136, Blk. 5, H.&G.N. Sur. ..... Set 8-in. casing 1,975 ft.; pay 2,530-35 ft.; 100 qts. 2,507-33 ft.; 1,600 ft. oil; cleaning out; total depth 2,573 ft.; pumped 60 bbls. 24 hrs.

GLASSCOCK COUNTY

Chas. Daniel et al's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor. Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur.. Shut down 500 ft.

Gibson & Johnson's No. 1 Mann, C NW Sec. 6, Blk. 33, T.&P. Sur. ..... Hole full salt water 3,415 ft.

R. R. Penn's No. 1 Hughes-Johnson, C NW Sec. 45, Blk. 30, W.&N.W. Sur. ..... Underreaming 2,775 ft.

Marland Prod. Co. et al's No. 7-A Settles, 2,310 ft. S and W of NE cor. Sec. 158, Blk. 29, W.&N.W. Sur. .. Location.

McElreath & Suggett's No. 1 Underwood, C NE Sec. 24, Blk. 36, Twp. 4s, T.&P.R.R. Sur. ..... Location.

Meriweather Oil Co.'s No. 2 McDowell, 1,492 ft. N and 150 ft. E of SE Sec. 35, Blk. 34, Twp. 2s, T.&P. Sur... Hole full water 2,665 ft.; set 6-in. casing 2,700 ft.; shut down 2,960 ft.

World Oil Co.'s No. 1-C McDowell, 1,650 ft. S and 2,310 ft. W of NE cor. Sec. 21, Blk. 34 ..... Drlg. 1,075 ft.

White Eagle Oil & Ref. Co.'s No. 1 Dunbar, C of NW Sec. 46, Blk. 34, Twp. 4s, T.&P.R.R. Sur. ..... Drlg. 3,590 ft.

HOWARD COUNTY

Amerada Pet. Co. & Rycade Oil Corp.'s No. 7 Dora Roberts, 330 ft. S and 2,310 ft. W of NE cor. Sec. 137, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 2,190 ft.

Amerada Pet. Corp.'s No. 8 Roberts, 1,116 ft. N and 1,022 ft. W of SE Sec. 128, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 685 ft.

American Maracaibo Co.'s No. 1 Settles-D, 330 ft. S and 1,650 ft. E of NW cor. Sec. 158, Blk. 29, W.&N.W. R.R. Sur. ..... Drlg. 1,846 ft.

American Maracaibo Co.'s No. 4 Settles-C, 1,373 ft. S and 3,023 ft. E of NW cor. Sec. 6, Blk. 32, Twp. 2s .. Shut down 2,005 ft.

American Maracaibo Co.'s No. 5 Settles-C, 330 ft. S and W of NE cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. ..... Drlg. 1,538 ft.

Bristow & Merrick's No. 10 Hooks, 660 ft. S and 2,440 ft. E of NW cor. Sec. 140, Blk. 29, W.&N.W.R.R. Sur.. Drlg. 1,947 ft.

California Co.'s No. 5 Roberts, Lease 2, 1,170 ft. S and 150 ft. W of NE cor. Sec. 156, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 390 ft.

California Co.'s No. 1 Settles, 2,310 ft. N and W of SE Sec. 158, Blk 28, W.&N.W. Sur. ..... Shut down 3,056 ft.

Comet Oil Co.'s No. 3 Clay, 200 ft. S and E NW cor. Sec. 154, Blk. 29, W.&N.W.R.R. Sur. ..... Rigging up.

Cosden & Co.'s No. 3 Roberts, Lease C, 1,520 ft. N and 600 ft. W of SE cor. Sec. 128, Blk. 29, W.&N.W. R.R. Sur. ..... Drlg. 1,062 ft.

Coyle & Concord Oil Co.'s No. 6 D. Roberts, 1,650 ft. S and 150 ft. W of NE cor. Sec. 156, Blk. 29, W.&N.W. R.R. Sur. ..... Cleaning out 1,899 ft.

Cranfill & Reynolds' No. 1 Kloh-Rumsey, 353 ft. N and 150 ft. W of SE cor. Sec. 3, Blk. 32, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 1,615 ft.

Empire Gas & Fuel Co.'s No. 3 Clay, 1,315 ft. N and 1,570 ft. W of SE cor. Sec. 127, Blk. 29, W.&N.W. R.R. Sur. ..... Moving in material.

F. H. E. Oil Co.'s No. 11-B Dora Roberts, 1,700 ft. S and 2,310 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W. Sur. ..... Drlg. 2,328 ft.

F. H. E. Oil Co.'s No. 5-D Dora Roberts, 2,310 ft. S and 1,650 ft. E of NW cor. Sec. 136, Blk. 29 ..... Set 6-in. casing 2,930 ft.; shut down.

Green et al's No. 1 Slaughter, C SW Sec. 32, Blk. 31, Twp. 3n, T.&P.R.R. Sur. ..... Rig.

Group 1 Oil Co. & Marland Prod. Co.'s No. 1 Overton, 1,650 ft. N and 2,310 ft. W of SE cor. Sec. 5, Blk. 32, Twp. 2s, T.&P. Sur. ..... Rigging up standard tools 2,157 ft.

Group No. 1 & Marland Prod. Co.'s No. 5 Settles, 2,310 ft. S and 330 ft. E of NW cor. Sec. 133, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 2,167 ft.; swabbing.

Group No. 1 & Marland Prod. Co.'s No. 6 Settles, 2,310 ft. N. 330 ft. E of SW Sec. 133, Blk. 29 ..... Rigging up standard tools 2,003 ft.; preparing to pump.

Group No. 1 & Marland Prod. Co.'s No. 7 Settles, 330 ft. S and E of NW cor. Sec. 133, Blk. 29, W.&N.W. R.R. Sur. ..... Drlg. 1,814 ft.

L. C. Harrison et al's No. 1 G. M. Podge Est., SE cor. Sec. 9, Blk. 30, Twp. 1s, T.&P. Sur. — Hole full salt water 1,475-1,505 ft.; top lime 1,825 ft.; show oil 2,972-74 ft.; hole full fluid 3,257 ft.; total depth 3,257 ft.; plugged back to 3,000 ft. to shoot.

Hyer & Yates' No. 4 Clay, 990 ft. S and 1,650 ft. W of NE cor. Sec. 155, Blk. 29 — Set 6-in. casing 1,557 ft.; shut down.

Humble Oil & Ref. Co.'s No. 1 H. R. Clay, 990 ft. S and 330 ft. E of NW cor. Sec. 138, Blk. 29, W.&N.W. Sur. — Drlg. 2,648 ft.

Magnolia Pet. Co.'s No. 13 Dora Roberts, 2,440 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. — Rigging up standard tools 2,927 ft.; shut down.

Magnolia Pet. Co.'s No. 18 D. Roberts, 405 ft. N and 330 ft. E of SW cor. Sec. 135, Blk. 29, W.&N.W. R.R. — Drlg. 1,395 ft.

Marland Prod. Co.'s No. 3 Clay-F, 250 ft. S and 660 ft. W of NE cor. Sec. 138, Blk. 29, W.&N.W.R.R. Sur. — Shut down 2,675 ft.

Marland Prod. Co.'s No. 4 Chalk-C, 990 ft. W, 330 ft. S of NE cor. Sec. 140, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 1,458 ft.

Marland Prod. Co.'s No. 7 Clay, 990 ft. S and W of NE cor. Sec. 155, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 1,851 ft.

Marland Oil Co.'s No. 8-A Settles, 2,310 ft. N and E of SW cor. Sec. 158, Blk. 29, W.&N.W. Sur. — Location.

Midwest Exploration Co.'s No. 3 Clay-C, 330 ft. N and 990 ft. W of SE cor. Sec. 138, Blk. 29, W.&N.W.R.R. Sur. — Shut down 1,062 ft.

Moody Oil Co.'s No. 15 Roberts-B, 2,310 ft. S and 380 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 2,540 ft.

Moody Oil Corp.'s No. 13 D. Roberts, 2,310 ft. S and 2,260 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W.R.R. Sur. — Location.

Moody Oil Corp.'s No. 10 Roberts-E, 2,310 ft. S and 280 ft. W of NE cor. Sec. 136, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 2,390 ft.

Merrick & Bristow's No. 8 Dora Roberts, 990 ft. N and 330 ft. E of SW cor. Sec. 137, Blk. 29, W.&N.W. Sur. — Cem. 8¼-in. 1,929 ft.; drlg. 2,480 ft.

Plymouth Oil Co.'s No. 2 Kloh et al, 990 ft. S and 1,650 ft. W of NW cor. Sec. 5, Blk. 32, Twp. 2s, T.&P. R.R. Sur. — Rig.

Plymouth Oil Co.'s No. 3 Kloh et al, 1,650 ft. S and 990 ft. E of NW cor. Sec. 5, Blk. 32, Twp. 2s, T.&P. R.R. Sur. — Moving in material.

Schermerhorn Oil Co.'s No. 4 Roberts-A, 2,304 ft. S and 2,306 ft. W of NE cor. Sec. 137, Blk. 29, W.&N.W. R.R. Sur. — Total depth 2,983 ft.; preparing to pump.

Schermerhorn Oil Co.'s No. 5 Roberts-A, 1,650 ft. S and 2,250 ft. W of NE cor. of Sec. 137, Blk. 29, W.&N.W. Sur. — Drlg. 2,390 ft.

Superior Oil Co.'s No. 14 Dora Roberts-B, 2,310 ft. E and 380 ft. S of NW cor. Sec. 137, Blk. 29, W.&N.W. Sur. — Location.

Superior Oil Co.'s No. 15 Dora Roberts-B, 2,310 ft. S and 380 ft. E of NW cor. Sec. 137, Blk. 29, W.&N.W. R.R. Sur. — Drlg. 2,540 ft.

Witherspoon et al's No. 2 Kloh-Rumsey, 280 ft. N and 3,315 ft. E of SW cor. Sec. 3, Blk. 32, Twp. 2s, T.&P.R.R. Sur. — Drlg. 1,903 ft.

HUDSPETH COUNTY

American Land Co.'s No. 1 Lockhart & Roseborough, C SE Sec. 5, School Blk. 21 — Total depth 260 ft.; shut down; tools moved off.

California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor. Sec. 19, Blk. E — Set 16-in. casing 591 ft.; total depth 624 ft.; shooting crooked hole.

Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, Twp. 6, T. &P. Sur. — Straightreaming 2,700 ft.; total depth 2,865 ft.; fishing job.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 — Hole full water 2,945 ft.; underreaming 8¼-in. casing at 2,840 ft.; trying to get water shut off; shut down 3,140 ft.; trying to pull casing.

IRION COUNTY

Fuhrman Pet. Co.'s No. 1 J. O. Suggs, Lease 1, C SE Sec. 3,024, Blk. 24, H.&T.C. Sur. — Location.

Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 2, C SW Sec. 3,009, Blk. 24, H.&T.C. Sur. — Location.

Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 3, C SE Sec. 3,009, Blk. 24, H.&T.C. Sur. — Drlg. 2,510 ft.

Kimbrough & Flinchbaugh's No. 1 Tankersley, 160 ft. S and 200 ft. W of NE cor. Sec. 712, Ford Willig Sur. — Shut down 360 ft.

Kimbrough & Tuel's No. 1 J. M. Nutt, 1,320 ft. S. 200 ft. E of NW cor. Sec. 5, Gonzales Co. School Land — Set 6-in. casing 1,360 ft.; show oil and gas; shut down 1,400 ft.

Pecos Valley Oil Co.'s No. 1 Stocks, 2,500 ft. N and 1,250 ft. W of SE cor. Sam Wallstein Sur. No. 746 — Drlg. 1,115 ft.

Signal Oil Co.'s No. 2 Suggs, 5,240 ft. from N line and 996 ft. from W line, Sec. 23, Blk. 27, H.&T.C. Sur. — Top salt 760 ft.; set 15-in. casing 1,360 ft.; drlg. 2,065 ft.

Sun Oil Co.'s No. 1 Tankersley, 2,128 ft. N and 1,173 ft. E of SW cor. Sec. 8, G.C.&S.F. Sur. — Shut down 1,452 ft.

F. E. Webb et al's No. 1 J. M. Nutt — Shut down 3,240 ft.

Wesley West et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, H.&T.C. Sur. — Top pay 3,368 ft.; swabbed 35 bbls. oil and 40 bbls. water; 35.8 gravity oil; show oil 5,480-83 ft.; show oil 5,660-70 ft.; shut down 5,875 ft.

JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means, 1,622 ft. N line, 600 ft. W line Sec. 345, H.&T.C. Sur. — Show gas 3,271 ft.; fresh water 600-05 ft.; U.R. 5 3/16-in. csg.; shut down.

JONES COUNTY

Anna Belle Oil Co.'s No. 1 Bickley, 330 ft. S and E of NW cor. SE NE Sec. 50, Blk. 18, T.&P. Sur. — Rig.

E. P. Campbell et al's No. 2-C Herndon, 330 ft. N and E of SW cor. NW, Sec. 6, M.E.P.&P. Sur. — Shut down 2,435 ft.

Cosden & Co.'s No. 1 Brown, 200 ft. N and 300 ft. W of SE cor. J. H. Grayson Sur. — Cleaning out 2,530 ft.

Cosden & Herbert Oil Co.'s No. 1 Bickley, 320 ft. N and 319 ft. E of SW cor. S half NW Sec. 50, Blk. 18, T.&P. Sur. — Rig.

Cosden-Herbert et al's No. 3 Bickley, 330 ft. N and W of SE cor. of S half NW Sec. 50, Blk. 18 — Rig.

Cosden & Herbert Oil Co.'s No. 6 Bickley, 330 ft. S and 319 ft. E of NW cor. S half NW of Sec. 50, Blk. 18, T.&P. Sur. — Fishing 2,310 ft.

P. K. French's No. 1 Lieson, 150 ft. N and E of SW cor. of E half NW Sec. 31, Blk. 14, T.&P.R.R. Sur. — Spudded and shut down.

Grisham & Hunter Corp.'s No. 1 Hester, 330 ft. N and E of SW cor. of E half, Lot 12, Kratz Sur. A-247 — Drlg. 400 ft.

Grisham & Hunter's No. 1 Tiner, 311 ft. N and 330 ft. W of SE cor. Gabriel Zumwalt Sur. — Show oil 2,526 ft.; total depth 2,541 ft.; shot with 60 and 80 qts. 2,815-25 ft.; to pump.

Humble Oil & Ref. Co.'s No. 1 Bickley, 330 ft. N and 200 ft. E of SW cor. of N half of S half of SW Sec. 50, Blk. 18, T.&P.R.R. Sur. — Rig.

Marland Prod. Co.'s No. 7 Mason, 330 ft. S and 990 ft. W of NE cor. S half NE Sec. 18, Blk. 19, T.&P. Sur. — Swabbed 41 bbls. 2,517-20 ft.

Mid-Sun Oil Corp.'s No. 1 George Hoehn, 660 ft. N and W of SE cor. SE 40 ac. of N 160 ac. of W 320 ac. of A Crain Sur. A-162 — Drlg. 2,480 ft.

McClanahan et al's No. 1 Hall, 150 ft. N and E of SW cor. of Hall 220-acre tract, C.&M.R.R. Co. Sur. — 100 ft. oil; drlg. 1,745 ft.

McGinley Corp.'s No. 1 Whittemore, 660 ft. N and W of SE cor. SE NE Sec. 39, B.B.B.&C. — Shut down 1,600 ft.

McMan Oil & Gas Co.'s No. 2 Bickley, 330 ft. N and E of SW cor. of NE Sec. 50, Blk. 18, T.&P.R.R. Sur. — Orlg. 1,250 ft.

McNeeley et al's No. 1 Roscoe Bland, 1,175 ft. N and 240 ft. W of SE cor. Subdivision 20, A-164, DeWitt Co. School Land. — Spudded and shut down.

Phillips Pet. Co.'s No. 6 Mason, 330 ft. S and 300 ft. W of NE cor. W half of NE Sec. 18, Blk. 19, T.&P. Sur. — Shut down 2,528 ft.; show 2,492-96 and 2,512-14 ft.

Roberts Oil Corp.'s No. 8 Grayson, 2,083 ft. N and 330 ft. W of SE cor. of their lease out of Sec. 13, Blk. 19, T.&P. — S.D. 2,516 ft.

Roeser-Pendleton & Landreth Prod. Co.'s No. 4 Grayson-A, 315 ft. S and 990 ft. W of NE cor. their lease out of Sec. 13, Blk. 19, T.&P.R.R. Sur. — Cleaning out 2,500 ft.

Sedgwick O. & G. Co.'s No. 1 Routh, 1,250 ft. N, 2,500 ft. W SE cor. 299-acre tract, Austin & Williams Sur. 355-A-7 — Shut down 1,900 ft.

Sedgwick Oil & Gas Co.'s No. 1 Brown, 660 ft. N and 1,320 ft. E of SW cor. Sec 9, Blk. 1, T.&N.O. Sur. — Location.

The Texas Company's No. 2 Camp, 2,829 ft. N and 323 ft. W of SE cor. Camp 189.5-acre lease Sec. 13, T.&P. Sur., Blk. 19 — Rig.

The Texas Company's No. 6 Carter, 200 ft. S and W of NE cor. of L. Carter 173.5-ac. tract out of Sec. 13, Blk. 19, T.&P. — Drlg. 390 ft.

U. L. Tomberlin's No. 1 Horn, 1,980 ft. N and 600 ft. E of SW cor. of 502 ac. of Penney Sur. A-283 — Spudded and shut down.

W. D. Wells et al's No. 1 Britton, 150 ft. N and 890 ft. E SW cor. 640-ac. tract, H.&W. Sur. 354-355 — Location.

White Eagle Oil & Ref. Co.'s No. 1 W. B. Teague, 933 ft. N and W of SE cor. Sec. 30, Austin & Williams Sur. No. 339 — Location.

LOVING COUNTY

Lockhart & Co.'s No. 1 R. A. Cox et al, 600 ft. S and 1,980 ft. W of NE cor. Sec. 20, Blk. 26, T.&P. Sur. — Location.

Lockhart & Co.'s No. 1 Hazell, 2,792 ft. SW of NE line and 660 ft. NW of SE line Sec. 84, Blk. 33, H.&T.C. R.R. Sur. — Rigging up standard tools.

Lockhart & Co.'s No. 1 H. L. Lepp, 330 ft. each way from S cor. of Sec. 3, Blk. 2, W.&N.W. Sur. — Top salt 715 ft.; drlg. 2,400 ft.

Lockhart & Co.'s No. 1 Hubbard, 2,640 ft. NE and 660 ft. NW Sec. 84, Blk. 33, H.&T.C.R.R. Sur. — Top salt 700 ft.; total depth 2,[illegible] ft.; 31 degree gravity oil, [illegible] water; flowing 100 bbls. dai[illegible]

Lockhart & Co.'s No. 2 Hubbard, 1,660 ft. from NE line and 330 ft. from SE line of Sec. 83, Blk. 33, H.&T.C.R.R. — Rig.

Lockhart & Co.'s No. 1 Johnson, 660 ft. S and 1,980 ft. W of NE cor. Sec. 20, Blk. 56, Twp. 1, T.&P. R.R. Sur — Moving in material.

Lockhart & Co.'s No. 1 Wheat-E, 990 ft. from NE and SE lines Sec. 85, Blk. 33, H.&T.C.R.R. Sur. — Rigging up standard tools.

MITCHELL COUNTY

Magnolia Pet. Co.'s No. 6 Foster, 1,980 ft. N and E of SW cor. Sec. 17, Blk. 29, Twp. 1s, T.&P.R.R. Sur. — Drlg. 1,983 ft.

Simms Pet. Co.'s No. 1 Elwood, C SE of Sec. 29, Blk. 18, S.P.R.R. Sur. — Rebuilding rig; 2,000,000 ft. ga[illegible] set 12-in. casing 604 ft.; cem[illegible] casing 780 ft.; set 10-in. casi[illegible] 882 ft.

Teas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. — Four bailers salt water per h[illegible] 3,405 ft.; drlg. 3,940 ft.

NOLAN COUNTY

L. G. Bradstreet et al's No. 1 Kuteman, C NW Sec. 95, Blk. X, T.&P. Sur. — Rig.

C. M. Root et al's No. 1 Martin, 330 ft. N and E of SW cor. NW Sec. 30, Blk. 19, T.&P.R.R. Sur. — Rigging up.

C. M. Root et al's No. 1 Simpson, 330 ft. S and W of NE cor. SE Sec. 33, Blk. 19, T.&P. Sur. — Oil shows 2,840 ft.; cleaning o[illegible] 3,090 ft.

PECOS COUNTY

Alexander & Lyle's No. 1 Myrtle Sellman, C SW SE Sec. 20, Blk. Z, T.S.Ry. Sur. — Top salt 814 ft.; top lime 1,6[illegible] ft.; 3,400,000 ft. gas from 1,61[illegible] 26 ft.; spraying very little o[illegible] sulphur water 1,652 ft.; sh[illegible] down 1,655 ft.

Atlantic O. P. Co.'s No. 1 Trees, 330 ft. from N and 990 ft. from W line Sec. 108, Blk. 8, H.&G.N.R.R. Sur. — Location.

M. H. Black's No. 1 P.V.O. Co., 2,310 ft. from SE and 1,650 ft. from SW lines Sec. 22, Blk. 10, H.&G.N. Sur. — Location.

H. R. Bell et al's No. 1 Gray, 150 ft. from S and 2,490 ft. from W line Sec. 593, G.C.&S.F.R.R. Sur. — Location.

Buell & Hagan's No. 1 University-B, 330 ft. N and 2,310 ft. W of SE cor. Sec. 36, Blk. 18, University Land — Location.

Cowboy Evans' No. 1 Pecos Valley, 2,310 ft. from NW line, 990 ft. from SW line of Sec. 36, Blk. 3, H.&T.C. R.R. Sur. — Location.

Crowley's No. 1 Heiner, 2,400 ft. each way from N and E lines Sec. 589, G.C.&S.F.R.R. Sur. — Drlg. 440 ft.

California Co.'s No. 2 Smith, Lease 5, Sec. 16, 1,550 ft. from W and 200 ft. from N line Blk. 194, G.C.&S.F. R.R. Sur. — Rig.

M. C. Dibble & Hale's No. 1 Bonebrake, Sec. 115, Blk. 8, H.&G.W. Sur., elev. 2,555 ft. — Top lime 1,305 ft.; set 6-in. co[illegible] ing 1,610 ft.; pulling 8¼-in. ca[illegible] ing; total depth 2,004 ft.

Ditto Oil Co.'s No. 1 J. M. Montgomery, Sec. 104, Blk. 331, A-16,387 — Shut down 660 ft.

Geyer & Frates' No. 1 Smith, 1,320 ft. each way from N and E lines Sec. 8, Blk. 145, T.&St.L.R.R. Sur. — Rigging up.

Grayburg Oil Co.'s No. 1 University, 990 ft. S and 330 ft. W of NE cor. Sec. 2, Blk. 17, University — Drlg. 1,100 ft.

Gulf Prod. Co.'s No. 16 Smith-B, 990 ft. S and 990 ft. E of NW cor. Sec. 22, Blk. 194, G.C.&S.F.R.R. Sur. — Underreaming 725 ft.

Imperial Oil & Gas Co.'s No. 1 Pecos Valley Oil Co., 990 ft. from SE line and 1,650 ft. from SW line Sec. 22, Blk. 10, H.&G.N.R.R. Sur. — Location.

Marland Prod. Co.'s No. 1 Blakeslee, 330 ft. N of middle of S line Sec. 100, Blk. 8, H.&G.N. — Drlg. 1,710 ft.

Matador Oil Co.'s No. 3 Smith, 2,310 ft. from N and 990 ft. from E lines. Sec. 24, Blk. 194, G.C.&S.F.R.R. Sur. — Moving in machine.

Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. — Shut down 1,010 ft.

McCarty Oil Co.'s No. 1 A. A. Gray, 1,520 ft. from S and 150 ft. from W lines Sec. 591, Abst. 3,010 — T.D. 1,170 ft; top pay 1,152 ft; hole full fluid; pulling casing.

McMan Oil & Gas Co.'s No. 5 Smith-C, 2,600 ft. S and 1,740 ft. from W line of Sec. 25, Blk. 194, G.C.&S.F. — Drlg. 900 ft.

Mid-Kansas Oil & Gas Co.'s No. 5 Smith, 250 ft. S and 6,821 ft. E of NW cor. of Sec. 31, Blk. 194, G.C.&S.F. R.R. Sur. — Drlg. 1,095 ft.

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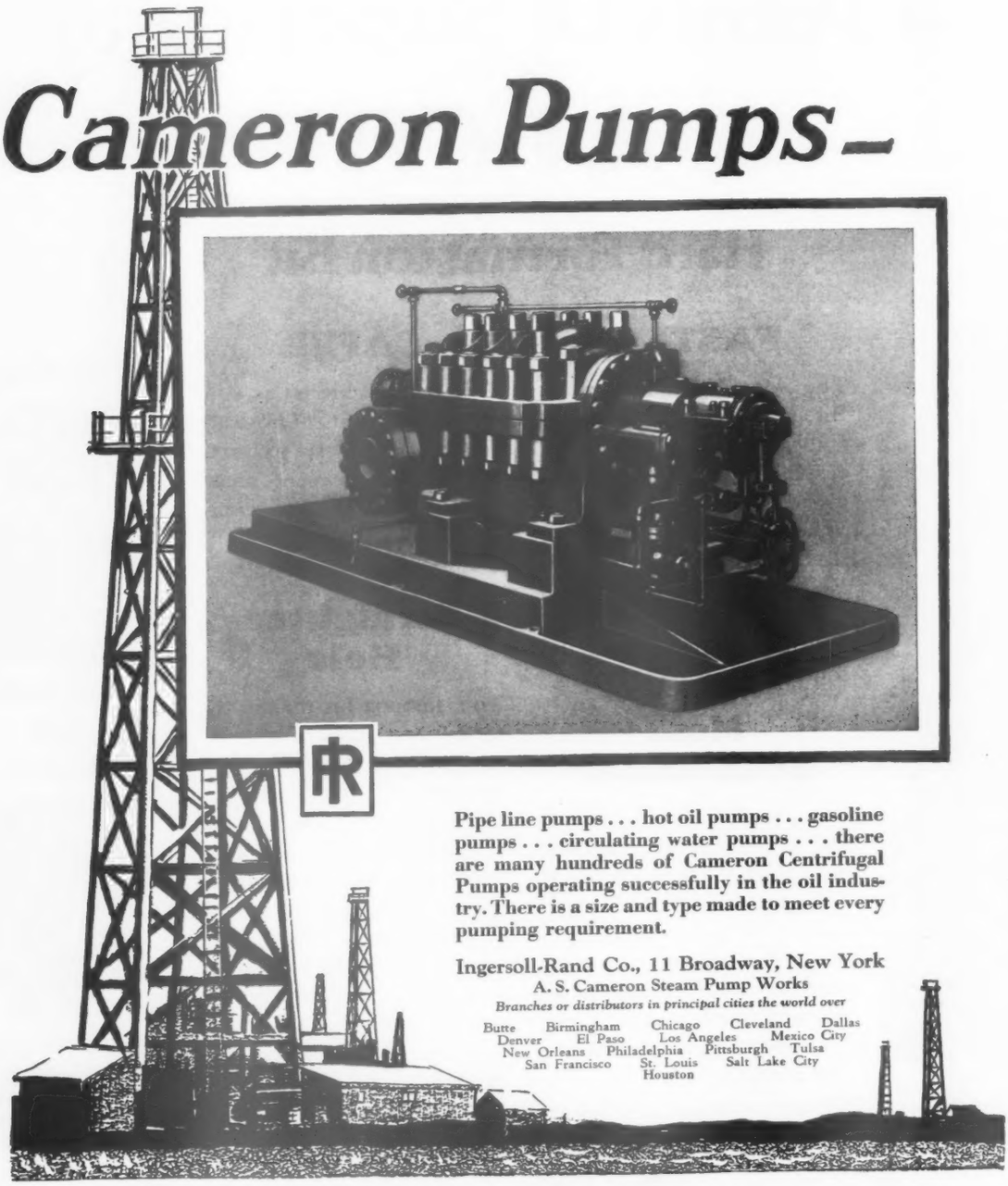

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R-1604

Mid-Kansas Oil & Gas Co.'s No. 26 Yates, 1,312 ft. N from most southerly N line, 1,388 ft. E from most westerly E line Sec. 32, Blk. 194, G.C.&S.F.R.R. Sur.... Location.

Pecos Valley Oil Co.'s No. 2 fee, 1,620 ft. from SW and 1,320 ft. from NW Sec. 22, Blk. 10, H.&G.N.R.R. Sur. .... Top salt 1,107 ft.; total depth 1,632 ft.; flowing 75 bbls.; will deepen.

Perrin et al's No. 1 Eaton, 150 ft. each way from NE and NW lines Sec. 27, Blk. 3, E.&T.C. Sur. .... Drlg. 328 ft.

Phillips Pet. Co.'s No. 1 Ramsey, 990 ft. from N and E lines, Sec. 17, Blk. 194, G.C.&S.F. Sur. .... Shut down 1,540 ft.

Stein & McGee's No. 1 Louis Paterson, 150 ft. SE of NW line, 150 ft. NE of SW Sec. 34, Blk. 10, H.&G.N.... Location.

B. J. Spikes' No. 1 George Brown .... Shut down 700 ft.

Schumaker et al's No. 1 Williams et al, 330 ft. N of middle of S line Sec. 1, Blk. 117, G.C.&S.F. .... Shut down 700 ft.

Southern C. O. P. Co.'s No. 1 Scharbauer Cattle Co., SW cor. Sec. 21, Blk. 134, T.&S.L. Sur. .... Show gas 1,455-60 ft.; water 3,175 ft.; drlg. 3,952 ft.

Talbot & Dittman's No. 1 Unsicker, 1,320 ft. from E and 660 ft. from S lines, Sec. 25, Blk. 10, H.&G.N. .... Shut down 1,509 ft.; flowing sulphur water.

Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 .... Top lime 1,155 ft; straightening crooked hole 4,199 ft.; drlg. 4,237 ft.

Trees Oil Co.'s No. 1 Trees, 330 ft. from N and E lines of Sec. 63, Blk. 8 .... Spud.

World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 45, Twp. 8, T.P.R.R. Sur., elev. 2,810 ft. .... Shut down 3,105 ft.

PRESIDIO COUNTY

L. C. Brite's No. 2 Brite, 2,500 ft. N, 2,200 ft. W of SE cor. Sec. 51, Blk. 12, G.H.&S.R. Sur. .... Location.

Phillips Pet. Co., Empire G. & F. Co., Delmar Oil Co. and C. E. Miller's No. 1 Tootle Est., C NE Sec. 75, Blk. 3, D.&P.R.R. Sur. .... Set 8-in. casing 2,365 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor. Sec. 1, Blk. 2, University Land.. Drlg. 530 ft.

The California Co.'s No. 5 University, 2,310 ft. from N and E lines Sec. 16, Blk. 7, University Land .... Top salt 1,280 ft.; underreaming 2,918 ft.; drlg. 2,952 ft.

Kemrow Co.'s No. 1 Sawyer Cattle Co., 1,320 ft. from N and 1,980 ft. from E line Sec. 8, J. G. Robinson Sur. .... Location.

R. V. Oberholtzer's No. 1 Talley, 1,650 ft. each way from S and W lines Sec. 6, G.C.&S.F.R.R. Sur. .... Drlg. 480 ft.

Texon O. & L. Co.'s No. 1-B University Group 1 .... Top pay 6,250 ft.; hole full of oil; well made two small heads; oil sand 8,482 ft.; total depth 8,525 ft.; flowing 2,135 bbls. daily.

REEVES COUNTY

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. .... Total depth 2,900 ft.; shut down.

Southern Crude O. P. Co.'s No. 1 Kloh-Rumsey, 2,310 ft. N and W SE cor. Sec. 23, Blk. 51 .... Drlg. 675 ft., red rock; hole full water 470 ft.

David R. Thompson's No. 1 A. A. Eddins .... Fishing casing 5,658 ft.

Robert Penn et al's No. 1 Bowles, 2,310 ft. SW of NE cor. Sec. 36, Blk. 50, Twp. 8, T.&P.R.R. Sur. .... Top salt 1,725 ft.; drlg. 4,470 ft., anhydrite.

Lee O. White et al's No. 1 Kloh-Rumsey, 660 ft. S and E of NW cor. Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. .... Drlg. 120 ft., lime.

RUNNELS COUNTY

Boyce et al's No. 1 E. O. Lange, 2,300 ft. S and 6,900 ft. W of NE cor. Austin & Williams Sur. No. 262 .... Shut down 1,350 ft.

Foster et al's No. 1 Currie, 1,866 ft. SE of NW line, 335 ft. SW of NE line Gray Carroll Sur. .... Shut down 360 ft.

R. D. Hamilton et al's No. 1 A. Spill, 1,320 ft. S and W of NE cor. A. Spill 891 acres, out of Thomas R. Webb Sur. 358 .... Shut down 100 ft.

Independent Oil & Gas Co.'s No. 1 Will Rollwitz, 330 ft. S and W of NE cor. S half M. Salinas Sur. No. 20½.. Drlg. 700 ft.

Mariand Prod. Co.'s No. 1 August Herring, 330 ft. S and 1,650 ft. W of NE cor. Sec. 39, E.T.R.R. Co. Sur... Drlg. 1,875 ft.

McLean et al's No. 1 G. W. Clayton, 150 ft. N line, 270 ft. from W line Sec. 135, E.T.R.R. .... Shut down 1,185 ft.

Nourse & Tilton's No. 1 R. A. Stokes, 200 ft. S, 600 ft. E of NW cor. G.C.&S.F. Sur. No. 2 .... Shut down 3,000 ft.

R. B. Summers et al's No. 1 J. W. Reese, M. J. Parramore Sur. 26 .... Shut down 1,650 ft.

Union Oil Co. of Nevada's No. 1 W. E. Allen, 1,000 ft. N and W of SE cor. Sec. 1, H.E.&W.T. Sur. .... Drlg. 3,380 ft.

SCHLEICHER COUNTY

J. F. Long and O. C. Long's No. 1 W. H. Williams, NE cor. Sec. 28, H.E.&W.T.R.R. Sur .... Shut down 275 ft.

SCURRY COUNTY

I. B. Mims et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 3, H.&T.C. Sur. .... Spudded and shut down.

G. E. Dieckman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. .... Drlg. 2,519 ft.

STERLING COUNTY

F. & G. Oil Co.'s No. 1 W. L. Foster, C SE Sec. 20, Blk. 12, S.P.R.R. Sur. .... Show oil 1,296-98 ft. and 1,356-58 ft.; shut down 2,175 ft.

George L. Miller's No. 1 Foster, 3,690 ft. S and 1,397 ft. W of NE cor. Sec. 4, Blk. 31, T.&P. Sur. .... Set 12½-in. casing 830 ft.; drlg. 1,300 ft.

SUTTON COUNTY

Phillips Pet. Co.'s No. 1 A. G. Holman, 2,310 ft. S and 330 ft. W NE cor. Sec. 25, G.C.S.D.&N.G.R.R. Sur. ... Drlg. 6,064 ft.

L. G. Priest's No. 1 Allison, 1,320 ft. N and E of SW cor. Sec. 52, Blk. A, T.&P. Sur. .... Set 15-in. casing 530 ft.

Southern C. O. P. Co.'s No. 1 Allison, 2,310 ft. S and 320 ft. W of NE Sec. 41, Blk. K, G.H.&S.A. Sur. .... Fishing 3,507 ft.

TAYLOR COUNTY

Graham-Hunter Corp.'s No. 1 Campbell, 330 ft. S and E of NW cor. SW Sec. 65, Blk. 19, T.&P. Sur. .... Drlg. 2,665 ft.

V. B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land .... Rig.

Mid-Continent Oil & Gas Co.'s No. 1 Taylor, 990 ft. W 215 ft. N SE cor. 100-ac. tract, Sec. 18, Guadalupe School Land Sur. .... 300 ft. oil 2,384-87 ft; 2,445-50 ft; swabbed 5 bbls.; drlg. 2,640 ft.

Wentz Oil Corp.'s No. 1 Armour, 375 ft. N and 330 ft. W of SE cor. W half Sec. 16, Blk. 6, S.P.R.R. Sur. .... Drlg. 1,825 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T.R.R. Sur. .... Spudded and shut down.

Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Blk. D-7, E.L.&R.R. Sur. .... Shut down 1,749 ft.

Mrs. J. B. McPhee's No. 1 Sam Belt, C Sec. 78, Blk. D-7, E.L.&R.R. Sur. .... Location.

Milham Exploration Co.'s No. 1 Bassett, Sec. 76, Blk. Y, W. E. Robertson Sur. .... Cem. 6⅝-in. casing 3,986 ft.; fishing 4,640 ft.

Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. .... Shut down 150 ft.

TERRY COUNTY

Kingsland O. & P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. .... Fishing bailer 5,080 ft.

TOM GREEN COUNTY

Collins et al's No. 1 Jones, CSL Sec. 646, Shaffer Sur. ... Shut down 1,800 ft.

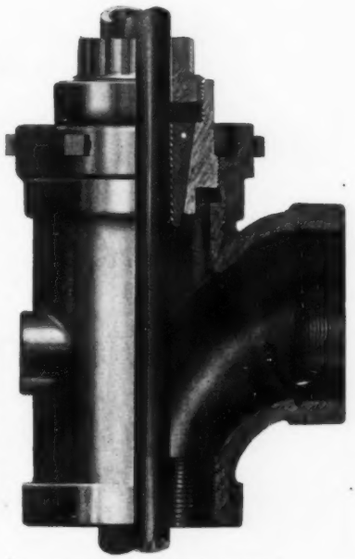
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,838, E. H. Ringer .... Shut down 1,920 ft.

Another new HERCULES tool that is meeting with great favor . . .

The HERCULES FLOW HEAD for air or gas lift

Made with either a 45 or 90° "T" or "Y" Type Body designed with an upward curved outlet that eliminates friction.

Top section, or flow head packing bowl, screws down into top of body and is equipped with three slips which supports the tubing by gripping completely around it. On top of the slips rests a packing ring which is compressed by a packing nut that screws down into the packing bowl and packs off around the tubing.



CROSS SECTION VIEW
(Patent Pending)

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(Patent Pending)

The body of the Flow Head is equipped with a regular casing head top, so if it is necessary to run tools into the well an oil saver can be used. This is done by unscrewing the top section and removing from FLOW HEAD body.

The body is made of electric steel casting and the top section or packing bowl is of forged steel, making the Flow Head an exceptionally strong and serviceable device. Tested to hold a working pressure of 3,000 pounds and to carry a hanging weight of better than 300,000 pounds. It is very simple and compact and is adaptable to all wells.

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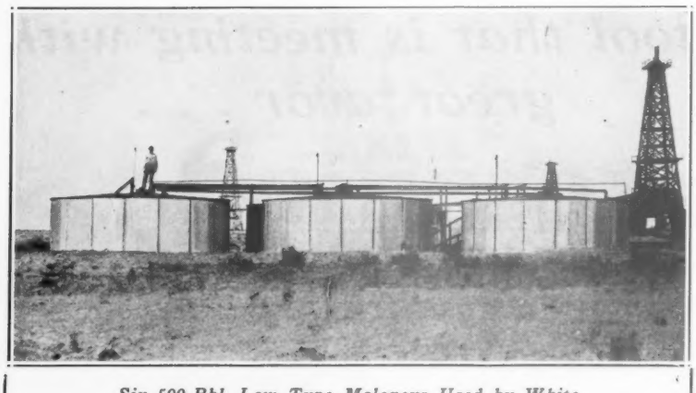

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The material used in MALONEYS, rust-resisting Keystone Copper Steel, insures maximum durability and minimum replacement expense.

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Distributers at All Principal Petroleum Points

Sizes: 12 to 10,000 Barrels

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Howell Aluminum "4-in-1" Vacuum Pressure Valve and Thief-Hatch—The BEST and LATEST Deck Equipment—POSITIVE Safety.

MADE OF KEYSTONE COPPER STEEL

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

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MALONEY
ALONE!

F. P. Green et al's No. 1 fee, 575 ft. from N and 1,450 ft. from W lines Sec. 165, District 11, S.P.R.R. Co. Sur. ..... Shut down 1,931 ft.
Williams et al's No. 1 Willeke, 2,500 ft. N and 75 ft. E of SW cor. Sec. 3, Deaf & Dumb Asylum Land ..... Drlg. 450 ft.

UPTON COUNTY

Wentz Oil Co.'s No. 5 Shirk, 2,310 ft. N and 1,650 ft. W of SE cor. Sec. 35, Blk. 1, M.-K.-T.R.R. Sur. ..... Top salt 815 ft.; total depth 1,[illegible] ft.; fishing.

YOAKUM COUNTY

Weekley Oil Corp.'s No. 1 Knight, C NW Sec. 791, Blk. D, John Gibson Sur. ..... Drlg. 625 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 4,850 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft.; tested 125,750 ft. gas; reset 8-in. 2,51[illegible] ft.; shut down 4,210 ft.

Producers Oil Co. et al's No. 1 Everett Bros., 2,310 ft. S and 330 ft. E of NW cor. Sec. 40, Blk. DB, C.C.S.D.&R.G.N.G. Sur. ..... Underreaming 2,120 ft.
Dyar Bros. et al's No. 1 Wilson, 6,830 ft. N NE cor. Sec. 1, T.&P. Sur., thence 1,680 ft. E Sec. 115, Blk. E, G.C.&S.F. Sur. ..... Show oil and gas 1,053 ft.; drlg. 2,820 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE Sur. 47, Blk. Y... Set 15½-in. casing 767 ft.; set 10-in. csg. 1,510 ft.; fish. 3,600 ft.

WARD COUNTY

Gulf Prod. Co.'s No. 4 O'Brien et al, C NW SW Sec. 19, Blk. F, G.M.M.&M.A. Sur. ..... Set 15½-in. casing 475 ft.; set 10-in. casing 1,153 ft.

J.H.L. Oil Co.'s No. 2 Hayzlett, 1,100 ft. from SW and 220 ft. from SE line Sec. 17, Blk. 5, H.&T.C. ..... Rigging up standard tools.
E. B. Lovelace et al's No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 162, Blk. 34, H.&T.C.R.R. ..... Drlg. 885 ft.

WINKLER COUNTY

Amerada Pet. Corp.'s No. 2 Daugherty, NW cor. NE SE Sec. 3, Blk. 74 ..... Top lime 2,854 ft.; top pay 3,225 ft.; cleaning out to test pay 3,225 ft.

American Maracaibo Co.'s No. 2 Hendricks-B, 1,980 ft. N and 1,650 ft. E of SW cor. Sec. 28, Blk. B-5 ..... Rig.
Atlantic O. P. Co.'s No. 5 Hendricks, 1,320 ft. S and 2,310 ft. W NE cor. Sec. 44, Blk. 26 ..... Rigging up rotary.
Barnsdall Oil Corp.'s No. 2 Tobe Morton, 1,650 ft. N and 330 ft. E of SW cor. Sec. 26, Blk. B-12 ..... Cem. 8¼-in. 2,758 ft.; top lime 2,571 ft; cmtng. 8¼-in csg. 2,758 ft.; drlg. 2,940 ft.

Barnsdall Oil Corp.'s No. 3 Tobe Morton, 990 ft. N and 330 ft. E of SW cor. Sec. 26, Blk. B-12 ..... Cellar.
Empire Gas & Fuel Co.'s No. 1-B Daugherty, 2,310 ft. S and 990 ft. W of NE cor. Sec. 3, Blk. 74 ..... Top lime 2,823 ft.; oil and gas show at 3,165 ft.; drlg. 3,378 ft.; flowing 15,000 bbls. daily; cem. 6⅝-in. casing 3,382 ft.; total depth 3,424 ft.; lowering 6-in. casing to shut off water.

Gulf Prod. Co.'s No. 4 Cowden, 495 ft. N and 330 ft. E of SW cor. of 240-ac. lease, Sec. 3, Blk. B-12 ..... Top lime 2,524 ft; cmtng. 8¼-in. csg. 2,529 ft.; drlg. 2,640 ft.

Humble Oil & Ref. Co.'s No. 5 Hendricks-C, 2,200 ft. N and 2,310 ft. E of SW cor. Sec. 10, Blk. B-12 ..... Top lime 2,620 ft.; total depth 3,067 ft.; flowing 4,000 bbls. daily, 95 per cent water; plug back to 3,022 ft.

Humble O. & R. Co.'s No. 9 Hendricks-C, Lease No. 2, 1,320 ft. N and 330 ft. E of SW cor. Sec. 10, Blk. B-12 ..... Top lime 2,498 ft.; cem. 6⅝-in. casing 2,509 ft.; drlg. 2,712 ft.

Humble O. & R. Co.'s No. 10 Hendricks-C, Lease 2, 2,290 ft. S and 330 ft. E of NW cor. Sec. 10, Blk. B-12 ..... Rigging up rotary.
Independent Oil & Gas Co.'s No. 3-B Hendricks, NW W half SE Sec. 44, Blk. 26 ..... Top lime 2,810 ft; cmtng. 8¼-in. casing 2,809 ft.; drlg. 2,880 ft.

Prairie O. & G. Co.'s No. 2 Daugherty, 330 ft. S and 990 ft. E of NW cor. Sec. 16, Blk. 74 ..... Cem. 12½-in. casing 158 ft.
Prairie Oil & Gas Co.'s No. 1 Scarborough, 990 ft. N and 1,650 ft. W of SE cor. Sec. 1, Blk. C-22 ..... Cem. 12½-in. casing 260 ft.; top salt 1,400 ft.; set 8¼-in. casing 2,845 ft.

Shell Pet. Co.'s No. 5 Scarborough, 330 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. C-22 ..... Top salt 1,110 ft.; drlg. 2,735 ft.
Skelly Oil Co.'s No. 1 Leck, 440 ft. N and 330 ft. E of SW cor. Sec. 22, Blk. 26, School Land ..... Top lime 2,444 ft; cmtng. 8¼-in. casing 2,450 ft.; drlg. 2,514 ft.

Skelly Oil Co.'s No. 1 Morton, 2,310 ft. N and 165 ft. W of SE cor. Sec. 27, Blk. B-12, School Land Sur. ..... Cellar.
Skelly Oil Co.'s No. 2 Hendricks-C, 1,320 ft. N and 2,310 ft. W of SE cor. Sec. 10, Blk. B-12 ..... Top lime 2,636 ft.; cem. 8¼-in. 2,642 ft.

Southern Crude O. P. Co.'s No. 6 Hendricks T-67-3-A, 990 ft. S and 1,650 ft. W of NE cor. Sec. 4, Blk. B-12 ..... Cmt. 12½-in. csg. 2,245 ft; drlg. 2,226 ft.

Southern Crude O. P. Co.'s No. 5 Hendricks T-67-F, 330 ft. N and 990 ft. W of SE cor. Sec. 33, Blk. B-5, School Land ..... Drlg. 2,550 ft., anhydrite.
Simms Pet. Co. et al's No. 2 Sealey, 2,434 ft. S and 990 ft. W of NE cor. Sec. 50, G.M.M.&A. Sur. ..... Rotary rig.
Southern Crude O. P. Co.'s No. 8 Hendricks T-88-C, 2,310 ft. S and 1,650 ft. E of NW cor. Sec. 28, Blk. B-5, School Land ..... Drlg. 312 ft.
Southern Crude O. P. Co.'s No. 6 Hendricks T-88-K, 2,200 ft. S, 1,650 ft. W of NE cor. Sec. 41, Blk. 26 ... Cem. 12½-in. casing 876 ft.
Southern Crude O. P. Co.'s No. 3 Hendricks T-88-O, 440 ft. S, 330 ft. W of NE cor. Sec. 28, Blk. 26 ..... Drlg. 500 ft.
Southern Crude O. P. Co.'s No. 2 Hendricks T-88-Q, 440 ft. S and 330 ft. E of NW Sec. 27, Blk. 26, School Land ..... Top lime 2,375 ft; cmtng. 8¼-in. csg. 2,387 ft.; drlg. 2,435 ft.

Southern Crude O. P. Co.'s No. 1 Hendricks, T-88-CX, 440 ft. N and 330 ft. W of SE cor. Sec. 21, Blk. 26, School Land ..... Cem. 12½-in. casing 780 ft.; top lime 2,390 ft.; cem. 8¼-in. casing 2,402 ft.

Southern Crude O. P. Co.'s No. 7 Hendricks T-88-H, 2,310 ft. N and 990 ft. E of SW Sec. 28, Blk. B-5, School Land ..... Drlg. 1,515 ft., salt and red rock.
Southern C. O. P. Co.'s No. 6 Hendricks T-88-D, 440 ft. N and 1,320 ft. W of SE cor. Sec. 4, Blk. B-12 ..... Top lime 2,558 ft; cmtng. 8¼-in. casing 2,578 ft.; drlg. 2,644 ft.

Southern C. O. P. Co.'s No. 3 Hendricks T-89-J, 2,200 ft. N and 330 ft. W of SE cor. Sec. 9, Blk. B-12, School Land ..... Top lime 2,551 ft; cmtng. 8¼-in. casing 2,556 ft.; drlg. 2,844 ft.

Southern Crude O. P. Co.'s No. 6 Hendricks T-89-J, 2,200 ft. S and 330 ft. W of NE cor. Sec. 9, Blk. B-12.. Building rig.
Southern Crude O. P. Co.'s No. 7 Hendricks T-89-J, 1,540 ft. from N and 1,320 ft. from E lines Sec. 9, Blk. B-12 ..... Rig.
Texas Canadian Oil Co.'s No. 1 Kloh-Rumsey, 1,320 ft. N and E of SW cor. Sec. 35, Blk. 46, T.&P.R.R. Sur... Total depth 900 ft.; drlg. by tools.
Texon Oil & Land Co.'s No. 6 Grisham & Hunter-B, 1,320 ft. N and 990 ft. E of SW cor. Sec. 45, Blk. 26.. Top lime 2,510 ft; cmtng. 8¼-in. casing 2,522 ft.; drlg. 2,639 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 39)

Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur. ..... S.D. 510 ft. for csg.

CHILDRESS COUNTY

C. L. Soane et al's No. 1 B. P. Smith, Sur. 49, F. P. Knott lands ..... S.D. 4,340 ft.

The Texas Co.'s No. 1 Smith, 100 ft. each way from NW cor. Sec. 174, Blk. H., W.&N.W. Sur. ..... Hole full sulphur wtr. 3,985 ft; fish. bailer 4,450 ft.

COTTLE COUNTY

Explin. Co.'s No. 1 Richards ..... Drlg. 3,350 ft.

Explin. Co.'s No. 4 Matador Land & Cattle Co., C Sec. 46, J. H. Stephens Sur. ..... S.D. 3,227 ft.

Sun Oil Co.'s No. 1 T. B. Yarborough, 485 ft. S and 2,460 ft. E NW cor. Sec. 551, Block H, W.&N.W. Sur. Drlg. 3,620 ft.

DONLEY COUNTY

Beaudoin et als' No. 1 Ball, 1,075 ft. from N line and 985 ft. from E line, Sec. 22, Blk. E, D.&P.R.R. Sur. Location.

Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur. ..... Spud.

GRAY COUNTY

Anderson et als' No. 1 Heitholt, C NE SW, Sec. 152, Blk. 3, I.&G.N. Sur. ..... Spud. and S.D.

B. S. Arnold's No. 1 J. E. Mingale, C E 160 ac., Sec. 212, Blk. B-2, H.&G.N. Sur. ..... S.D. 1,412 ft.

Arnold & Howell's No. 1 Turnex, C SW, Sec. 111, Blk. B-2 ..... S.D. 2,224 ft. for pipe.

Barnsdall Oil Corp.'s No. 1 M. B. Davis, NW cor. W½ SE, Sec. 9, Blk. 1, A.C.H.&B. Sur. ..... Drlg. 2,119 ft.

Camel Oil Co.'s No. 1 Harrah-B, 330 ft. each way from NW cor. NE, Sec. 150, Blk. 3, I.&G.N. Sur. ..... Rig.

Crabtree Drlg. Co.'s No. 1 B. F. Talley, SW NE, Sec. 114, Blk. M-2, B.S.&F. Sur. ..... S.O. 2,400 ft; S.D. 2,735 ft.

Cockrell-McElroy et als' No. 1 McConnell, 330 ft. each way from NE cor. W½ SW, Sec. 174, Blk. 3, I.&G. N.R.R. Sur. ..... Drlg. 1,000 ft.

Constantine et als' No. 1 Dial, 330 ft. S and E of NW cor. W½ NW, Sec. 32, Blk. 25, H.&G.N. Sur. ..... Drlg. 2,480 ft.

Danciger et als' No. 1 Shaw, 1,000 ft. N and 330 ft. W SE cor. SW, Sec. 5, Blk. 1, A.C.H.&B. Sur. ..... 35,000,000 ft. gas 2,290 ft; show oil 2,610-13 ft; S.D. 2,645 ft.

Danciger et als' No. 1 J. E. Williams, 330 ft. each way from NE cor. NW SW, Sec. 6, Blk. 1, A.C.H.&B. Sur. Drlg. 2,510 ft.

Danciger et als' No. 1 Sheridan, SE cor. Sec. 184, Blk. B-2, H.&G.N.R.R. Sur. ..... Location.

Empire G. & F. Co.'s No. 1 A. R. Clay, NE cor. Sec. 185, Blk. B-2 ..... 3,288 ft; 300 ft. oil; 1,000 ft. wtr. 3,364 ft; to P.B.

Eslick & McKinney's No. 1 Mrs. Hopkins, 330 ft. from NE E½ NE, Sec. 84, Blk. B-2, H.&G.N. Sur. ..... S.D. 2,865 ft.

Sines & Reiger's, formerly Eslick et als' No. 1 Mrs. J. A. Hopkins, NW cor. W 80 ac. of SW, Sec. 84, Blk. B-2, H.&T.C. Sur. ..... Pull 6-in. csg. 3,206 ft.

Gulf Prod. Co.'s No. 4 Holmes-A, 990 ft. N and 330 ft. E of SW cor. W½ SE, Sec. 87, Blk. 3, I.&G.N.R. R. Sur. ..... T.D. 3,430 ft; P.B. to 3,404 ft. to shut off wtr.

Gardner Bros. & Collins' No. 2 Saunders, 350 ft. from N on center line of W 68 of W½ of E½ of J. G. Eustis Sur. ..... Location.

Independent O. & G. Co.'s No. 1 Hottenbeck, 990 ft. each way from NE cor. NE, Sec. 176, Blk. 3, I.&G. N.R.R. Sur. ..... Rig.

Magnolia Pet. Co.'s No. 1 Gething, 530 ft. each way from SE SW, Sec. 14, Blk. A-9, H.&G.N. Sur. ..... Drlg. 2,700 ft.

Malone et als' No. 1 Taylor, 990 ft. S and E of NW cor. NW, Sec. 22, Blk. B-2, H.&G.N. Sur. ..... 600 ft. oil top of G.W. 3,024 ft; drlg. 3,175 ft.

Marland Prod. Co.'s No. 1 Brown-Finley, 330 ft. S and W of NE cor. Sec. 32, Blk. B-2, H.&G.N.R.R. Sur... 51,000,000 ft. gas 2,785-90 ft; T.D. 2,815 ft.

McLain Oil Co.'s No. 1 Back, 1,000 ft. from W line and 330 ft. from N line, NW, Sec. 24, Blk. 25, H.&G. N. Sur. ..... Drlg. 1,500 ft.

Midwest O. & G. Co.'s No. 1 Bower-B, 1,650 ft. from E and 330 ft. from N lines, Sec. 93, Blk. B-2, H.&G. N.R.R. Sur. ..... Drlg. 2,925 ft.

Nabob Oil Co.'s No. 2 Morse, 660 ft. from W line and 330 ft. from S line SW, Sec. 67, Blk. 25, H.&G.N. R.R. Sur. ..... Cellar.

Operators Oil Co.'s No. 3 Jackson, 330 ft. S and 990 ft. E of NW cor. N½ NE, Sec. 88, Blk. B-2, H.&G. N.R.R. Sur. ..... T.D. 2,816 ft.

Parton & Holt's No. 1 Gething, 330 ft. each way from SE cor. NE, Sec. 14, Blk. A-9 ..... S.D. 2,980 ft.

Phillips Pet. Co.'s No. 5 Johns, 330 ft. N and 990 ft. E of SW cor. SW, Sec. 87, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,200 ft.

Purple Sage Oil Co.'s No. 2 E. B. Johnson ..... 2,000,000 ft. gas; 200 ft oil 2,870 ft; shot with 510 qts. 2,775-2,872 ft; 400 ft. oil; S.D. 2,875 ft.

Republic Prod. Co.'s No. 1 G. H. Saunders, 330 ft. each way from SW cor. E½ NW cor. Sec. 4, Blk. 1, A. C.H.&B. Sur. ..... 25 bbls. 2,710-50 ft; T.D. 2,824 ft; may deepen.

Schwald et als' No. 1 fee, 330 ft. each way from NE cor. E½ SW, Sec. 1, Blk. 1, A.C.H.&B. Sur. ..... Fish. 2,570 ft.

Shell Pet. Corp.'s No. 2 McConnell, 330 ft. S and E of NW cor. E½ SW, Sec. 174, Blk. 3, I.&G.N.R.R. Sur. Drlg. 1,000 ft.

St. Clair Oil Co.'s No. 1 Dial, 330 ft. S and W of NE cor. SE, Sec. 10, Blk. 25, H.&G.N.R.R. Sur. ..... Cellar.

St. Clair Oil Co.'s No. 1 Rowe, Sec. 32, Blk. R ..... Fish. 2,890 ft.

St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor. Sec. 35, W. R. Lee Sur. ..... Spudded and S.D.

Southern Pet. Exp. Co.'s No. 3 McConnell, 1,650 ft. from W line and 330 ft. from S line NW, Sec. 174, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 1,700 ft.

The Texas Co.'s No. 6 Davis, 330 ft. S and 1,650 ft. W NE cor. NW, Sec. 86, Blk. 3, I.&G.N.R.R. Sur. ..... Stdzng. 2,357 ft.

The Texas Co.'s No. 1 Faulkner, 330 ft. each way from NW cor. Sec. 29, Blk. B-2, H.&G.N. Sur. ..... Cellar.

The Texas Co.'s No. 2 McLarty-B, at center of J. M. Rose Sur. ..... Rig.

The Texas Co.'s No. 10 Saunders, 330 ft. N and W of SE cor. W½ of J. G. Eustis Sur. ..... Drlg. 1,721 ft.

Travis et als' No. 2 Back, 330 ft. each way from NW cor. E½ SE cor. Sec. 44, Blk. 25, H.&G.N.R.R. Sur... Rig.

Travis et als' No. 1 J. S. Morse, SE NW SW, Sec. 68, Blk. 25, H.&G.N. Sur. ..... 30,000,000 ft. gas 2,592-2,610 ft; light spray oil 2,740-45 ft; to deepen.

Wilcox-Pampa Oil Co.'s No. 31 Worley Reynolds, 330 ft. N and E SW cor. SE SW, Sec. 61, Blk. 3, I.&G.N.. S.O. 2,928 ft; drlg. 3,030 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger County school lands; elevation 3,363 ft.; contract depth 5,000 ft. ..... S.D. 1,455 ft.

HARTLEY COUNTY

Amarillo Oil Co.'s No. 9 Lee Bivins "A," C NW, Sec. 6, Blk. 21 ..... 15,000,000 ft. gas 3,300-35 ft; T.D. 3,601 ft; deepen.

Canadian River Gas Co.'s No. 10 Burns-A, 660 ft. N and 660 ft. E, Sec. 18, Blk. 2, G.&M. Sur. ..... Drlg. 1,260 ft.

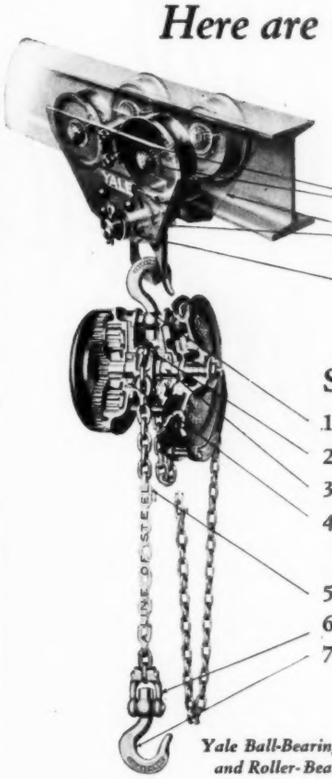
TRADE YALE MARK

Yale Ball-Bearing Chain Blocks and Roller-Bearing Trolleys

possess the

Highest Mechanical Efficiency

Here are the salient features:



Yale Steel Plate Roller-Bearing Trolleys

1 Eight sets of Hardened and Ground Roller-Bearings support the four chilled tread trolley wheels.

2 Wrought Steel Plate Suspension Members, with bumpers, protect the wheel flanges and are connected at a single pivotal point by the steel equalizing pin.

3 All Yale Trolleys can be readily adjusted to four sizes of I-beam.

Yale Ball-Bearing Spur-Geared Chain Blocks

1 Drop-forged Top Safety Hook and Crosshead, designed to withstand shock and surge loads of several times their rated capacity.

2 Heavy Wrought Steel Suspension Plates connect the upper hook with the ball-bearings on which the load sheave rotates.

3 A massive One-piece Electric Steel Load Sheave, mounted on two ball-bearings, each carrying eighteen chrome vanadium steel balls.

4 Two sets of Large Chrome Vanadium Ball-Bearings support the massive steel load sheave and reduce friction where load pressure is greatest, making the Yale Ball-Bearing Spur-Geared Chain Block the most efficient, easiest to operate, and lowest in cost of maintenance.

5 Steel Load Chain, each link die-formed, electrically welded, heat-treated, and accurately gauged.

6 Drop-forged Detachable Shackle, simple to connect to any length of load chain by means of the drop-forged, heat-treated oval pin.

7 Steel Safety Hook, the "safety valve" of the Yale Block, is drop-forged from special steel.

Yale Ball-Bearing Chain Block and Roller-Bearing Trolley

FROM "HOOK TO HOOK A LINE OF STEEL"

The Yale & Towne Manufacturing Company

Stamford, Conn., U. S. A.

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Houston, Texas
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Butler, Pa.

WICKWIRE SPENCER UNIFORM WIRE ROPE
tests better than A.P.I. specifications

HUTCHINSON COUNTY

Antelope Creek Oil Co.'s No. 3 Sanford, 330 ft. from N line and 330 ft. from W line of E½ S 160 ac. of Sec. 82, Blk. 46, H.&T.C. Sur. ..... C.O. 3,085 ft.
Amarillo Oil Co.'s No. 2 Ingerton-A, 1,650 ft. from N line, 1,071 ft. from E line Sur. 41, H.&T.C.R.R. Sur. .. Rig on ground.
Dunnigan et als' No. 1 C. W. Hugenbyhl, 330 ft. from S line and 330 ft. from E line, N½, Sec. 4, Blk. T, W.&N.G.R.R. Sur. ..... Swb. 8 bbls. oil and 1 bbl. w... 3,130 ft; drlg. 3,203 ft.
Marland Prod. Co.'s No. 1 Johnson-C, 450 ft. S and W of NE cor. Sec. 5, Blk. 1, B.&B. Sur. ..... Drlg. 1,790 ft.
Oil Operators Trust Co. and Marland's No. 2 J. M. Stanford-B, Sec. 82, Blk. 46, H.&T.C. Sur. ..... S.D. 3,039 ft.
Phillips Pet. Co.'s No. 2 Jasper, 980 ft. from S line and 660 ft. from E line SE, Sec. 23, Blk. M-23, T.C.R. R. Sur. ..... Set 6-in. csg. 3,005 ft.
Phillips Pet. Co.'s No. 3 Sanford-Garland, 330 ft. N and E of SW cor. Sec. 77, Blk. 46, H.&T.C. Sur. ..... Drlg. 2,600 ft.
Phillips Pet. Co.'s No. 16 Whittenburg, Sec. 63, Blk. 46, H.&T.C. Sur. ..... Drlg. 2,645 ft.
The Texas Corp.'s No. 2 Moore, 990 ft. from N line and 330 ft. from W line SW, Sec. 125, Blk. 4, I.&G.N. Sur. Drlg. 700 ft.
Timms et als' No. 1 Moore, 330 ft. N and E of SW cor. S 40 ac. NW, Sec. 21, Blk. M-21, T.C.R.R. Sur. ..... S.D. 800 ft.

KING COUNTY

The Texas Co.'s No. 1 J. H. Johnson ..... S.D. 4,300 ft.
Huff Oil Co.'s No. 1 Martin, 1,320 ft. from N line and 1,320 ft. from E line Sec. 171, Blk. F, H.&T.C. Sur... Rig.

LAMB COUNTY

Dan Freel et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. ..... Spudded and S.D.

LIPSCOMB COUNTY

Brown et als' No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. ..... S.D. 3,128 ft.
Ruby Oil Co.'s No. 1 C. W. Jones, NE SW, Sec. 100 H.&T.C. Sur. ..... Straightening crooked hole f... 428 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch ..... Small show oil 1,133-40 ft; sand, fish. 4,105 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 2 Warrick, C S 160 ac., Sec. 92, Blk. 46, H.&T.C. Sur. ..... Drlg. 125 ft.
Canadian Gas Co.'s No. 1 Kilgore-A, 2,716 ft. S and 2,695 ft. W of NE cor. Sec. 1, Eustis Sur. ..... Drlg. 2,280 ft.
Devonian Oil Co.'s No. 1 Sneed, 330 ft. N and 2,335 ft. W of SE cor. of S 160 ac. of N 320 ac., M. Robinson Sur. ..... Stdzng. 2,400 ft.
Dixie Creek Oil Co.'s No. 1-A Sneed, Jr., 330 ft. N and W of SE cor. E½, Sec. 65, Blk. 3, G.M. Sur. ..... 400 ft. oil 3,305-15 ft; H.F.W. a... 3,330 ft; P.B. to 3,316 ft; shot with 30 qts. 3,241-68 ft and 5... qts. 3,283-3,316 ft; C.O.
Dixie Creek Oil Co.'s No. 4-A Sneed, Jr., 330 ft. S and W of NE cor. E½, Sec. 65, Blk. 3 ..... 10,000,000 ft. gas 2,835-55 ft; 5... ft. oil 3,304-05 ft; H.F.W. 1... 354 ft; P.B. to 3,336 ft; shot with 55 qts. 3,305-25 ft. and second shot 3,217-38 ft; C.O.
Fritch O. & G. Co.'s No. 1 Lee Burns, C NE 40 ac. of N 160 ac., Sec. 4, Geo. Mahan Sur. ..... Spudded and S.D.
McMan O. & G. Co.'s No. 2 Sneed, 2,260 ft. S and 990 ft. W of NW cor. J. W. Proctor Sur., located in M. Robinson Sur. ..... Drlg. 2,910 ft.
Skelly Oil Co.'s No. 6 Armstrong & Byrd, 1,600 ft. S and 990 ft. E NW cor. of J. N. Proctor Sur. ..... Stdzng. 1,494 ft.
Skelly Oil Co.'s No. 7 Armstrong & Byrd, 2,260 ft. S and 990 ft. E NW cor. J. N. Proctor Sur. ..... Rig.
Phillips Pet. Co.'s No. 1 Burnett, 330 ft. each way from NE cor. NE, Sec. 192, Blk. 3-T, T.&N.O. Sur... Drlg. 3,050 ft.
Phillips Pet. Co.'s No. 3-A Sneed, Jr., 1,600 ft. S and 430 ft. W of NW cor. J. N. Proctor Sur. ..... Drlg. 1,560 ft.
Phillips Pet. Co.'s No. 4 Sneed, 1,600 ft. S and 990 ft. W of NW cor. J. W. Proctor Sur., and located in M. Robinson Sur. ..... Fish. 2,395 ft.
Phillips Pet. Co.'s No. 1 Taylor, 330 ft. N and E of SW cor. E½ NW cor. Sec. 244, Blk. 3-T, T.&N. O. Sur. ..... Drlg. 1,990 ft.

MOTLEY COUNTY

Explth. Co.'s No. 1 Tillson ..... Drlg. 3,310 ft.
Explth. Co.'s No. 5 Matador, C, Sec. 45, Blk. J-B, C.B. &C.N.G.R.R. Co. Sur. ..... Rig.
Explth. Co.'s No. 6 Matador, 330 ft. from N line and 330 ft. from E line, Sec. 132, Blk. M ..... Rig on ground.

ROBERTS COUNTY

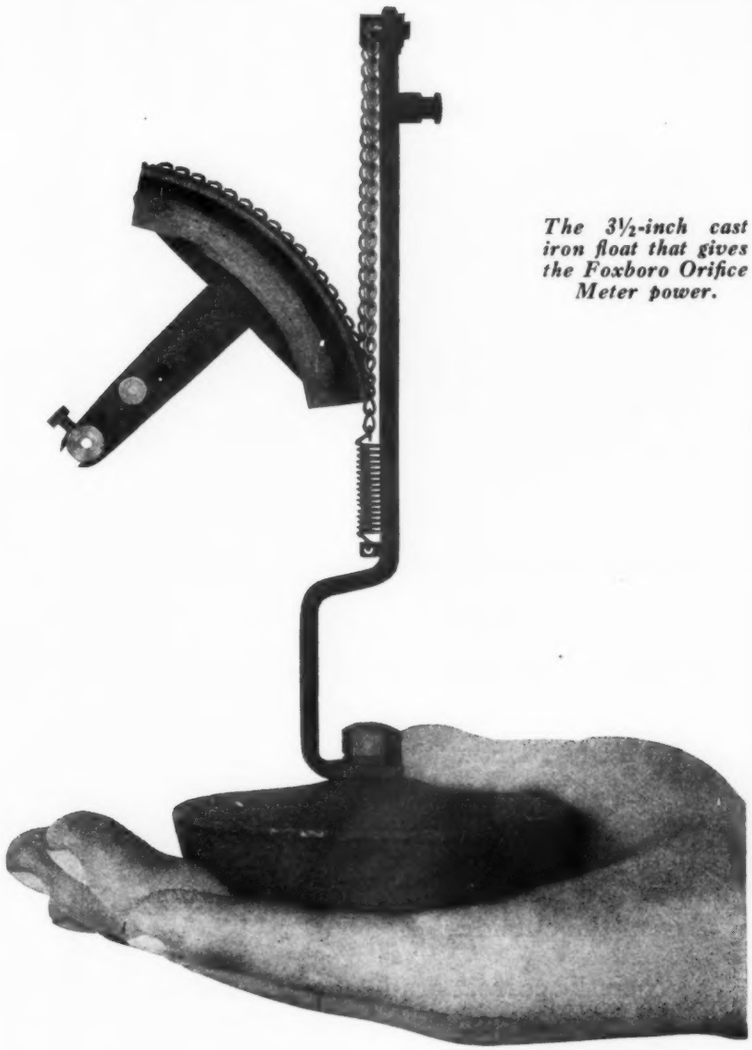
Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. 5-A ..... Formerly abd. at 5,240 ft; small show 36 gravity oil 5,288-91 ft; show oil brown sand 5,710-1... ft; 300 ft. wtr; S.D. 5,975 ft; to P.B. and shoot.

WHEELER COUNTY

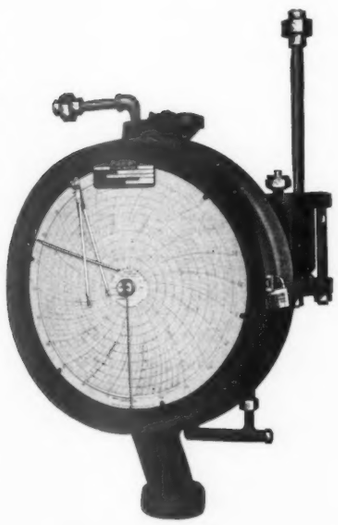
Angus et als' No. 2 Morgan, C E½ NW NE, Sec. 93, Blk. 17, H.&G.N. Sur. ..... U.R. 6-in. 1,740 ft.
Arnold Oil Co. et als' No. 1 Ritchey, 420 ft. from E and 460 ft. from S lines of NW cor. Sec. 5, Blk. 24, H.&G.N. Sur. ..... S.D. 1,820 ft.
Byrens et als' No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H.&G.N. Sur. ..... S.D. 2,920 ft.
Clark et als' No. 4 Purcell, C SW SW, Sec. 51, Blk. 17, H.&G.N.R.R. Sur. ..... Drlg. 1,730 ft.
Edwards et als' No. 2 Trostle, C NW NW, Sec. 130, Blk. 23, H.&G.N. Sur. ..... S.D. 1,845 ft.
Fain-McGaha and Humble's No. 1 Noel, 330 ft. each way from NE cor. S½ SE, Sec. 54, Blk. 24, H.&G. N. Sur. ..... Drlg. 2,200 ft.
Gibson Oil Co.'s No. 6 Bentley, 330 ft. S and E of NW cor. SE SE, Sec. 42, Blk. 24, H.&G.N.R.R. Sur. ..... made 12-bbl. head 2,273-90 ft; C. O. 2,347 ft.
Johnson & Co.'s No. 1 Purcell, 430 ft. from N line and 570 ft. from W line NE, Sec. 50, Blk. 17, H.&G.N. Sur. Drlg. 1,620 ft.
Lone Star Co.'s No. 1 Hicks, C SW NE, Sec. 52, Blk. 17, H.&G.N. Sur. ..... Rig.
Lone Star Gas Co.'s No. 4 Jones, C SE NE, Sec. 1, Blk. 24, H.&G.N. Sur. ..... Drlg. 1,300 ft.
Lone Star Gas Co.'s No. 1 Turnbow, C NE SW, Sec. 67, Blk. 17, H.&G.N.R.R. Sur. ..... Drlg. 280 ft.
Mudge Oil Co.'s No. 1 Hicks, C SW SW, Sec. 52, Blk. 17, H.&G.N.R.R. Sur. ..... Drlg. 1,720 ft.
L. W. Rook's No. 1 M. Nelson, C SW NE, Sec. 5, Blk. 24 H.&G.N. Sur. ..... S.D. 2,020 ft.
Swain & Miller's No. 1 Woodley, C NW NW, Sec. 21, Blk. 24, H.&G.N.R.R. Sur. ..... Spud.
Swain & Miller's No. 1 Turnbow, C NE SW, Sec. 67, Blk. 17, H.&G.N.R.R. Sur. ..... Location.
The Texas Co.'s No. 1 Gordon, 330 ft. N and 405 ft. W SE cor. NW, Sec. 91, Blk. 17, H.&G.N.R.R. Sur. ..... Pipe stuck 1,838 ft.
L. W. Rook's No. 2 A. Smock, C SW SE, Sec. 5, Blk. 24, H.&G.N. Sur. ..... Rig.
Vaughn et als' No. 1 Woodley, C NE NE, Sec. 21, Blk. 24, H.&G.N. Sur. ..... Drlg. 1,350 ft.
Wisch Kamper's No. 1 Adamson, C NE SE, Sec. 50, Blk. 17, H.&G.N.R.R. Sur. ..... Drlg. 1,425 ft.
Upham Gas Co.'s No. 1 Raybo, C S½ NW NW, Sec. 105, Blk. 23, H.&G.N. Sur. ..... S.D. 450 ft.

Dirt won't stop this float

THE big 3½ inch float of the Foxboro Orifice Meter has the power to defy dirt and moisture. Consistent accuracy is certain in spite of occasional neglect or unusually severe operating conditions.



The 3½-inch cast iron float that gives the Foxboro Orifice Meter power.



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No need to worry about calibrating a Foxboro Orifice Meter in the field—we take care of that at the factory. A few drops of mercury, more or less, makes no difference. A simple micrometer screw zeros the Instrument. Uniform pen motion and uniform chart scale gives an accurate reading throughout the entire range.

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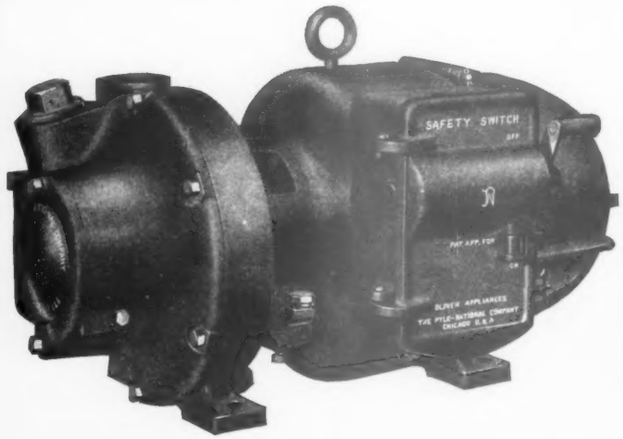

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RELIABLE rig lighting service without attention is insured by the combination of special heavy duty ball bearings and large oil supply protected against loss of oil or contamination from the outside.

When the correct grade of oil is used the reservoir requires filling only at long intervals. Type M-2-S rig lighting unit can be operated in perfect safety for several months without any attention at all on account of the protection given by the enclosed bearing housings and the large capacity of the oil cellar.

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O&GJ 3-21-Gray

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 44)

British American Oil Co.'s No. 1 McCarty, NE cor. NW Sec. 31-25-17w ..... Drlg. 3,167 ft.

GEARY COUNTY

Wright et al's No. 1 Younker, NW cor. NE Sec. 17-11-5.. Shut down 1,200 ft.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w ..... Shut down 2,450 ft.

HARPER COUNTY

Amerada Pet. Corp.'s No. 1 Mendiville, C E SE Sec. 24-34-6w ..... Shut down 5,353 ft.

HARVEY COUNTY

R. S. Austin's No. 1 Nieman, SW cor. SW Sec. 21-24-2... Wilcox sand 3,408-13 dry, drlg deeper.

R. F. Garland's No. 1 Cox, NE cor. NE Sec. 27-24-1w.... Drlg. 3,070 ft.

Empire G. & F. Co.'s No. 1 Tangeman, SW cor. NE NE Sec. 19-22-1e ..... Drlg. 2,415 ft.

Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w ..... Shut down 2,100 ft.

Hartman & Skaer's No. 1 Seamen, NW cor. NE SE Sec. 26-24-1e ..... Rig.

Helmerich & Payne's No. 1 Lindamond, C SW NE SW Sec. 2-22-1e ..... Shut down 2,185 ft.

Fisher & Louch et al's No. 1 Reiger, NW cor. NE Sec. 17-23-2 ..... Drlg. 2,340 ft.

Jolly & Ogg's No. 1 Randall, NE cor. NE Sec. 11-24-1w.. Drlg. 975 ft.

Patton et al's No. 1 Duning, SE cor. SW NE Sec. 26-24-1.. Rigging up.

Rosenthal et al's No. 1 Ingalls, NW cor. SW Sec. 24-23-3w ..... Rig.

JEFFERSON COUNTY

Wichiet Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 ..... Rigged up and shut down.

JACKSON COUNTY

Garvin & Morton's No. 1 Lutes, SW cor. NW NW Sec. 27-7-15 ..... Shut down 940 ft.

LANE COUNTY

Blankenship Pet. Co.'s No. 1 Schaeffer, NE cor. NE Sec. 24-16-23w ..... Spudded and shut down.

MARSHALL COUNTY

Irwin et al's No. 1 Cooper, NE cor. NW Sec. 10-3-7 ..... Shut down 600 ft.

MARION COUNTY

J. E. Hauna's No. 1 Pankratz, NE cor. NE SW Sec. 13-20-3 ..... Rig.

A. E. Meyers' No. 1 Papp, SW cor. SW NE Sec. 10-18-2.. Shut down 800 ft.

Frank L. Moore's No. 1 Miller, NE cor. NE Sec. 26-19-1.. Rig.

McPHERSON COUNTY

Ted Washabaugh's No. 1 Vosshell, NE cor. NE Sec. 9-21-3w ..... Drlg. 2,735 ft.

Lariaux et al's No. 1 Martinson, NE cor. Sec. 9-19-3w... Rig.

Vickers Pet. Co.'s No. 1 Wedell, C SW Sec. 12-20-2w.... Rig.

Mid-Kansas Oil & Gas Co.'s No. 1 Yoder, C NW SW Sec. 8-20-4w ..... Drlg. 3,135 ft.

Marland Prod. Co.'s No. 1 Wilkering, C SW SW Sec. 9-21-1w ..... Drlg. 2,700 ft.

NESS COUNTY

Barnsdall Oil Co.'s No. 1 Lauk, C SW Sec. 35-18-21w.... Drlg. 3,060 ft.

OSBORNE COUNTY

S. D. Jarvis' No. 1 Jellison, SE cor. SE Sec. 13-10-15w... Drlg. 1,400 ft.

OTTAWA COUNTY

Anderson et al's No. 1 Bank, NE cor. NW Sec. 28-10-2w.. Shut down 3,215 ft.

PAWNEE COUNTY

F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 31-21-16w. Shut down 1,560 ft.

PHILLIPS COUNTY

Watsonia Oil Co.'s No. 1 Marklein, NE cor. SW Sec. 21-3-19w ..... Drlg. 3,895 ft.

British American Oil Co.'s No. 1 Weinman, C SW SW Sec. 34-2-19w ..... Rig.

PRATT COUNTY

O'Haver & Jones' No. 1 Lunt, C SW NW Sec. 15-28-14w.. Spudded and S. D.

RENO COUNTY

Austin Drilling Co.'s No. 1 Strickley, SW cor. NW Sec. 17-25-5w ..... Rig.

RICE COUNTY

Allison & Fitzwilliams' No. 1 Poland, NE cor. SW NE Sec. 36-19-8w ..... Cellar.

Higgins & Stembubble's No. 1 Shurr, NE cor. SW Sec. 21-20-10w ..... Shut down 1,820 ft.

ROOKS COUNTY

Prairie Oil & Gas Co.'s No. 1 Sandberg, C SW Sec. 20-9-18w ..... Shut down 1,600 ft.

Burford & Brimm's No. 1 Toxa, NE cor. SW SE Sec. 22-18-17w ..... Spudded and shut down.

RUSH COUNTY

Phillips Pet. Co.'s No. 1 Legleiter, NE cor. NW SE Sec. 10-16-18w ..... Drlg. 1,540 ft.

Sinclair Oil & Gas Co.'s No. 1 Berching, NW cor. NE NW Sec. 9-16-16w ..... Drlg. 3,775 ft.

Danciger Oil Ref. Co.'s No. 1 Poland, NE cor. SW NE Sec. 17-19-17w ..... Shut down 530 ft.

Wilcox Oil & Gas Co.'s No. 1 Schwartzkopf, NE cor. NW SW Sec. 27-27-17w ..... Rig.

Wilcox O. & G. Co.'s No. 1 Woodward, NE cor. NE Sec. 35-27-17w ..... Rig.

SALINE COUNTY

M. Estey et al's No. 1 Peterson, C NE Sec. 6-16-5w..... Spudded and shut down.

Boyle et al's No. 1 Miller, SW cor. SE Sec. 21-16-1w.... Shut down 2,615 ft.

Nathan Jones et al's No. 1 Robertson, NW cor. SW Sec. 27-14-2w ..... Shut down 3,085 ft.

SEDGWICK COUNTY

Bu-Vi-Bar et al's No. 1 Roberts, SE cor. SW Sec. 1-26-2w ..... Rig.

Lewis et al's No. 1 Taylor, NW cor. NE Sec. 23-27-2.... Drlg. 2,040 ft.

J. H. Tatlock et al's No. 1 Goelder, NW cor. NE Sec. 6-29-2e ..... Shut down 3,415 ft.

Kyser et al's No. 1 Stroot, SW cor. NW Sec. 8-26-2w..... Drlg. 3,079 ft.

Lario & Blair's No. 1 Tjaden, C NE SE Sec. 22-29-2w.... Shut down 2,245 ft.

R. Maglason et al's No. 1 Buckles, NW cor. SE Sec. 3-28-1w ..... Shut down 250 ft.

Magnolia Pet. Co.'s No. 1 Wise NW cor. NW Sec. 36-28-2w ..... Drlg. 1,720 ft.

McCulloch Oil Co.'s No. 1 John, C NE SW NE Sec. 24-29-1e ..... Drlg. 3,406 ft.

Washabaugh et al's No. 1 Harrison, NW cor. NE NE Sec. 3-26-2w ..... Spudded.

Morgan & Tilley's No. 1 Fitzgerald, NW cor. NE Sec. 5-26-1w ..... Drlg. 1,500 ft.

Barnsdall Oil Co.'s No. 1 Faber, SW cor. NW Sec. 6-27-1w ..... Drlg. 3,786 ft.

Connell & Slick's No. 1 Cross, NE cor. NE Sec. 27-25-1w. Plugging back to 2,730 ft.

VanZant & Mason's No. 1 Fox, C NW SW Sec. 19-25-1w.. Dry and abandoned 3,604 ft.

Miller Wentz' No. 1 Shaffer, NW cor. NE Sec. 9-27-2w ..... Drlg. 1,470 ft.

Kroder et al's No. 1 Harden, SW cor. NW SW Sec. 20-26-1e ..... Rigging up.

Morgan et al's No. 1 Corn, SW cor. NE Sec. 28-26-1w.... Drlg. 2,815 ft.

E. B. Shawver et al's No. 1 Reeves, SE cor. SW SE Sec. 19-28-1e ..... Drlg. 2,840 ft.

Shell Pet. Corp.'s No. 1 Lygrisse, SE cor. NE Sec. 15-26-2e ..... Drlg. 1,910 ft.

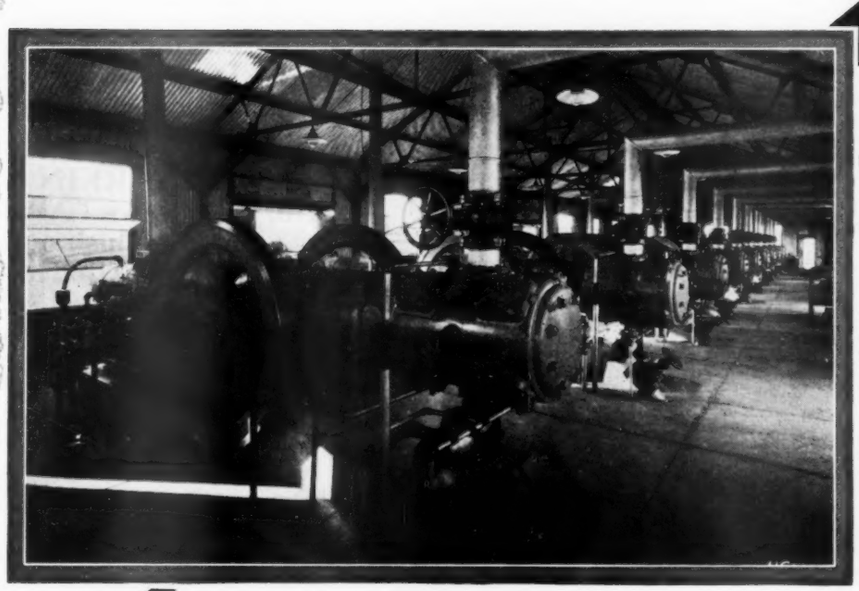
Washabaugh et al's No. 1 Lowery, NW cor. NE NE Sec. 3-26-2w ..... Rig.

Sullivan et al's No. 1 Shelly, NW cor. NE SE Sec. 32-29-2 ..... Spudded.

Hartman & Skaer et al's No. 1 Hutchinson, SE cor. SE SW Sec. 23-28-3w ..... Drlg. 841 ft.

J. H. Tatlock's No. 1 Cook, SW cor. SW Sec. 25-28-2.... Spudded.

Wild Gas Can't Eat 'em



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This bottom is used for drilling and breaking the sand loose. Its chisel-shaped design is unique, prevents sticking, and allows successful operation in tightly packed sands.

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Producers Oil Co.'s No. 1 Jones, SW cor. NE SE Sec. 31-26-2 ..... Rig.
Connell & Slick's No. 1 Mohammah, NE cor. SE SE Sec. 3-25-1w ..... Rig.
G. L. Ramsey's No. 1 Schluesser, SW cor. SW Sec. 1-25-1 ..... Drlg. 2,407 ft.
Jones & Kirk's No. 1 Sheppard, SE cor. NE Sec. 4-25-1... Spudded.
H. H. Patton's No. 1 Ryder, NE cor. NE Sec. 22-25-1.... Drlg. 2,614 ft.

SHERMAN COUNTY

A. L. Henson et al's No. 1 Murry, NE cor. SE NW Sec. 22-7-40w ..... Shut down 3,035 ft.

STEVENS COUNTY

Trees Oil Co.'s No. 1 Thompson, C NE SW Sec. 3-25-38w.. Drlg. 820 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w ..... Drlg. 1,710 ft.
McKenna et al's No. 1 Haun, SE cor. NE Sec. 10-33-38w. 2,000,000 ft. gas 2,579 ft.; shut in and completed.

SMITH COUNTY

Mid-Kansas Oil & Gas Co.'s No. 1 Unknown, NE cor. NE Sec. 4-2-13w ..... Drlg. 2,319 ft.

SUMNER COUNTY

McCullough Oil Co.'s No. 1 Teetle, SW cor. NE Sec. 29-34-1w ..... Shut down 4,632 ft.
Gypsy Oil Co.'s No. 1 Williams, NW SE SW Sec. 16-35-3w ..... Fishing 4,400 ft.
Davidson and others' No. 1 Strickland, SW cor. SE Sec. 12-35-1w ..... Rig.

TREGO COUNTY

Central Commercial Oil Co.'s No. 1 Ellis, NE cor. SW NE Sec. 20-13-21w ..... Shut down 3,300 ft.

WASHINGTON COUNTY

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3.. Rig.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 42)

KINGFISHER COUNTY

McKinney & Crawford's No. 1 Sturgeon, NE cor. SW Sec. 27-16-6w ..... Shut down 4,895 ft.

LOGAN COUNTY

Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w.. Drlg. 4,016 ft.

BLAINE COUNTY

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w ..... Spudded and shut down; renewing leases.
W. J. Donnelly, trustee's No. 1 Dickens, NE cor. SE Sec. 26-15-12w ..... Dry and abandoned 4,509 ft.
Ragland and others' No. 1 Unknown, C NW SW Sec. 13-19-10w ..... Rig.

LINCOLN COUNTY

Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3 ..... Rig.
Morgan & Flynn's No. 1 Finlay, SW cor. SW Sec. 19-16-6 ..... Rigging up.
Wheeler & Mote's No. 1 Kemmer, NW cor. NE SW Sec. 2-16-5 ..... Shut down 2,700 ft.

MUSKOGEE COUNTY

Elk Drilling Co.'s No. 1 Jones, SW cor. SW Sec. 34-13-17 ..... Shut down 400 ft.
L. T. Haney's No. 1 Mitchell, SE cor. NW SE Sec. 33-13-18 ..... Shut down 2,340 ft.
J. L. Slusher's No. 1 Nave, NE cor. SW NW Sec. 20-15-20 ..... Shut down 775 ft.
Colton & Lester's No. 1 Ellington, SW cor. NW SW Sec. 25-12-19 ..... Location.
Colton & Lester's No. 1 Parker, C NW SW Sec. 31-12-19.. Drlg. 1,250 ft.

HUGHES COUNTY

E. W. Whitney and others' No. 1 Moore, SE cor. SW Sec. 17-5-9 ..... Shut down 3,345 ft.
Howard Petroleum Co.'s No. 1 Gilbert, NW cor. SE Sec. 25-8-10 ..... Dry and abandoned 4,697 ft.
Gypsy Oil Co.'s No. 1 McGirt, NE cor. NW SW Sec. 21-6-8 ..... Sand 3,310-30 ft.; corrected, hole full water.

OKLAHOMA COUNTY

Slick & Bailey's No. 1 Koester, C SE NE Sec. 18-13-3w... Shut down 5,030 ft.
Cromwell & Franklin's No. 1 Thompson, SW cor. NE NE Sec. 15-12-3w ..... Drlg. 7,183 ft.
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE, Sec. 10-11-3w ..... Drlg. 4,348 ft.

OKFUSKEE COUNTY

Moose & Daniels' No. 1 Stidham, SW cor. NW Sec. 4-11-10 ..... Shut down 622 ft.
T. B. Slick, Inc.'s No. 1 Barry, SE cor. NE SE Sec. 21-11-7 ..... Underreaming 4,458 ft.
Erwin and others' No. 1 Patterson, NW cor. SE Sec. 15-13-9 ..... Location.
Erwin et al's No. 1 Patterson, NW cor. SE Sec. 15-13-9.. Location.
Prairie O. & G. Co.'s No. 1 Palmer, NW cor. NW NE Sec. 2-11-9 ..... Spudded.

SEQUOYAH COUNTY

Cooper & Badger's No. 1 Young, NW cor. NE NE Sec. 7-12-20 ..... Shut down.
Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-23 ..... Shut down 1,105 ft.
Buffington et al's No. 1 Melcher, C SW NW Sec. 31-12-24 ..... Shut down 2,320 ft.

PAWNEE COUNTY

Washoma Oil Co. and others' No. 1 Buffalo, SE cor. NE Sec. 33-22-5 ..... Shut down 3,200 ft.

POTTAWATOMIE COUNTY

Superior Oil Co.'s No. 1 Herminghausen, SW cor. NW NE Sec. 24-8-2 ..... Dry and abandoned 5,516 ft.
T. B. Slick's No. 1 Sailor, SE cor. NW NW Sec. 12-8-3... Drlg. 4,752 ft.
Mid-Continent Petroleum Corp.'s No. 1 James, SE cor. SE Sec. 22-5-3 ..... Rig.
Rush & Vaughn's No. 1 Lester, SE cor. NE NE Sec. 19-6-4 ..... Drlg. 2,420 ft.

CADDO COUNTY

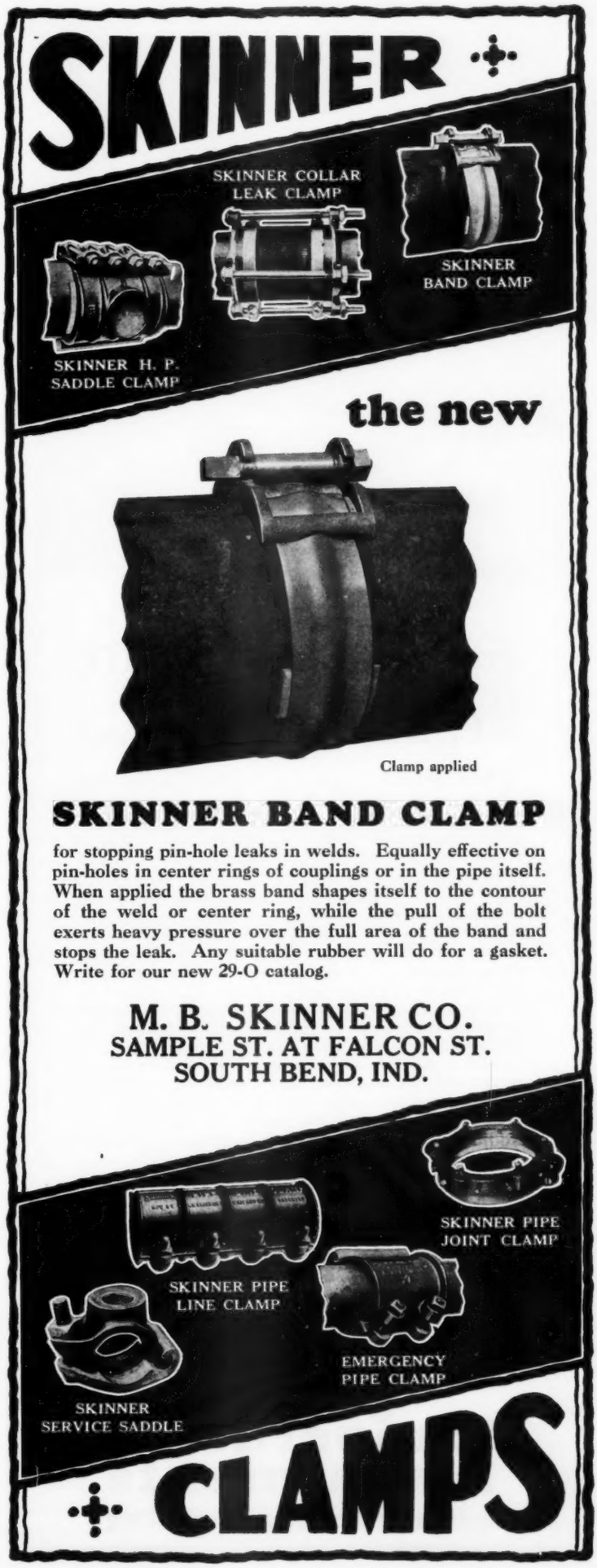
J. B. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w... Shut down 150 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w ..... Shut down 3,394 ft.
English Drilling Co.'s No. 2 Pruitt, CNL NW SE Sec. 22-6-10w ..... Rigged up and shut down.

STEPHENS COUNTY

Stahl & Burris' No. 1 Jefferson, SE cor. NE Sec. 29-2-5w ..... Shut down 3,012 ft.
Prince Bros.' No. 1 Hidgecoxie, NW cor. NE Sec. 29-2-5w ..... Abandoned 2,119 ft.

SEMINOLE COUNTY

Phillips Pet. Co.'s No. 1 Miller, NW cor. SW Sec. 34-11-7 ..... Shut down 3,950 ft.
Burke-Greis Oil Co.'s No. 1 Cyrus, SE cor. NE NW Sec. 13-9-7 ..... Drlg. 3,925 ft.
Gypsy Oil Co.'s No. 1 Andrews, NE SE NW Sec. 27-10-7 ..... Shut down 4,010 ft.
McCulloch Oil Co.'s No. 1 McGilbray, SW cor. NW NE Sec. 4-8-8 ..... Rerigging tools 3,325 ft.
McCulloch Oil Co.'s No. 1 Powell, NW cor. NW, Sec. 11-6-5 ..... Rigging up rotary.
Marland Oil Co.'s No. 1 Strothers, NW cor. SE NE Sec. 5-10-7 ..... Drlg. 4,833 ft.
Magnolia Pet. Co.'s No. 1 Carroll, SW cor. NW SE Sec. 1-7-5 ..... Dry and abandoned 4,820 ft.
Magnolia Pet. Co.'s No. 1 Harjo, NE cor. SE Sec. 34-6-7.. Drlg. 1,610 ft.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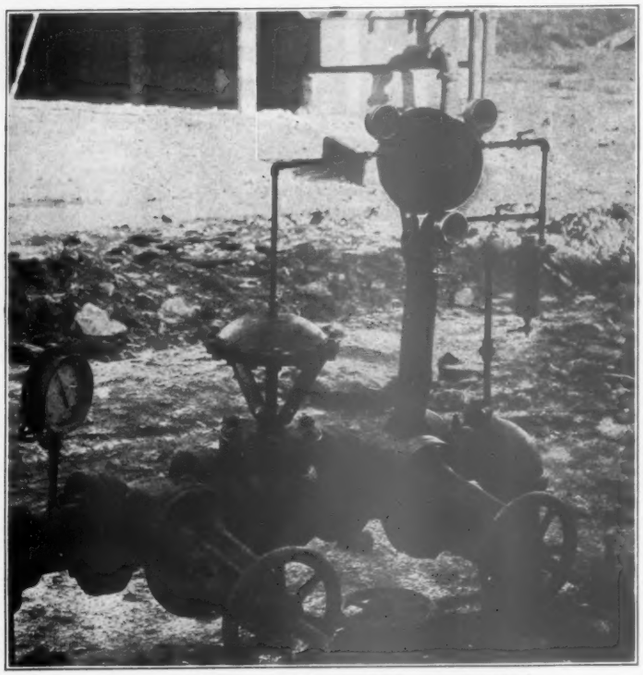

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Tycos Back Pressure Regulators (Pilot Operated)

THE *Tycos* Back Pressure Regulator successfully meets the demand for an instrument capable of giving close and consistent back pressure regulation, which the present highly developed and scientific practices of natural gasoline manufacturers demand. It will maintain constant back pressures on gasoline plant absorbers, accumulator tanks, fractionators or stabilizers, surge tanks, stock vent tanks, re-run stills, residue gas lines, etc. Also on pressure distillate receivers, or gas separators of refinery cracking units. Close regulation is assured by the high sensitivity of the regulator response and the throttling action of the control valve. With tendency toward the slightest pressure change in the process under control, the valve in the gas discharge line immediately throttles to such a position as is necessary to release the required amount of gas to give a consistently smooth and constant back pressure, as is evidenced in the even line on the recording pressure gauge chart.

Additional information on this installation furnished on request.

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Temperature Instruments

Indicating Recording Controlling

T. B. Slick and others' No. 1 Davis, NE cor. NE Sec. 26-6-6 ..... Drlg. 4,232 ft.

OSAGE COUNTY

Superior Oil Corp.'s No. 1, NW cor. NE Sec. 30-29-8..... Drlg. 1,226 ft.

MAJOR COUNTY

Randau & Mooney's No. 1 Parker, SE cor. NE NW Sec. 4-23-16w ..... Show oil 1,235 ft.; shut down.
Earl and others' No. 1 Turner, C NE NE Sec. 28-20-14w.. Rig.
Wilson et al's No. 1 Unknown, NE cor. NE Sec. 4-23-16w. Cellar.

WOODS COUNTY

E. K. Miller's No. 1 Copenhavers, NW cor. NW Sec. 18-24-13w ..... Rigged up and shut down.
Gypsy-Prairie and others' No. 1 Thompson, SE cor. SW Sec. 10-25-15w ..... Rigging cable tools 4,265 ft.
Sinclair Oil & Gas Co.'s No. 1 Thompson, C SW SW Sec. 33-27-16w ..... Rig and tools.

MURRAY COUNTY

Bison Oil Co.'s No. 1 Labor, NW cor. NW Sec. 17-1-2.... Shut down for casing 1,900 ft.
Ramsey Brothers' No. 1-A Malock, C SW NE Sec. 32-1-3. Drlg. 1,410 ft.

DEWEY COUNTY

Huckaby & McCoy's No. 1 Perfect, NE cor. NE Sec. 9-18-15w ..... Shut down 4,500 ft.
Don Sifers' No. 1 Jordan, SW cor. NW Sec. 16-16-17w.. Spudded and shut down.

BECKHAM COUNTY

C. & H. Petroleum Co.'s No. 1 Barnes, SW cor. NW NE Sec. 32-9-22w ..... Shut down 3,460 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w..... Shut down 725 ft.
Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w ..... Shut down 2,402 ft.
Trees Oil Co.'s No. 1 Rodgers, SW cor. SW Sec. 30-8-25w ..... Drlg. 100 ft.
Carson and others' No. 1 Danby, SW cor. SE NE Sec. 20-8-22w ..... Shut down 954 ft.
Pferffel and others' No. 1-A Carter, NE cor. NE Sec. 35-9-22w ..... Shut down 1,500 ft.
Day Oil Co.'s No. 1 Ault, NW cor. NW Sec. 33-8-21w..... Shut down 1,515 ft.; corrected.

GRADY COUNTY

Remington and others' No. 1 Fryrear, SW SW NE Sec. 13-9-5w ..... Shut down 720 ft.
J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w.... Spudded and shut down.
J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w ..... Rig.
J. B. Nichols' No. 1 Brake, SE cor. NE SE Sec. 7-5-7w... Shut down 2,307 ft.

McINTOSH COUNTY

Marione and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Shut down 2,387 ft.; corrected.
Patterson and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Shut down 5,451 ft.
Wolfe et al's No. 1 Unknown, NW cor. SE Sec. 15-12-18.. Rig on ground.

CLEVELAND COUNTY

Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w ..... Shut down 3,130 ft.
Phillips Pet. and T. B. Slick's No. 1 Hentleman, NE cor. NE Sec. 8-10-2w ..... Drlg. 5,500 ft.

KIOWA COUNTY

Blue Mountain Oil Co.'s No. 1 Jones, SE cor. NW NW Sec. 17-5-14w ..... Shut down 530 ft.
C. B. Cloyes' No. 1 Brazill, SW cor. NE Sec. 34-7-17w... Shut down 950 ft.
Dave Malernee's No. 1 Van Kirk, NW cor. NW Sec. 35-7-15w ..... Shut down 858 ft. in granite.
A. C. Varner and others' No. 1 Bonham, CSL NW NW Sec. 5-6-18w ..... Shut down 1,127 ft.

CUSTER COUNTY

W. E. Witt's No. 1 Wellman, C SE Sec. 1-14-14w..... Rig and tools.

PONTOTOC COUNTY

Moore & Curran's No. 1 Allen, SE cor. SW SW Sec. 23-5-5 ..... Shut down 1,460 ft.
Denver P. & R. Co.'s No. 1 Roberts, SE cor. NE NE Sec. 36-5-4 ..... Drlg. 1,800 ft.

COMANCHE COUNTY

Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w.. Shut down 4,055 ft.
Wright et al's No. 1 Cross, NW cor. SW SW Sec. 4-1-9w.. Rig.

COAL COUNTY

Indian Territory Illuminating Oil Co.'s No. 1 Cook, SW cor. NW Sec. 10-1-11 ..... Coring 6,535 ft.
Robert Galbreath and others' No. 1 Jones, SW cor. SE Sec. 24-1-9 ..... Fishing 3,350 ft.
J. S. Cosden's No. 1 Richardson, NW cor. NE NE Sec. 6-2-8 ..... Rigging up.
McGinley & Sigler's No. 1 Willsey, NW cor. SE SE Sec. 7-2-8 ..... Location.

PITTSBURG COUNTY

Kerr & Koy's No. 1 Hall, C NW NW Sec. 32-4-12 ..... Shut down 1,020 ft.

JACKSON COUNTY

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w ..... Shut down 2,020 ft.

SOUTHERN OKLAHOMA

BRYAN COUNTY

Alexander & Oppenheimer's No. 1 Hampton, SE cor. NE Sec. 26-7s-11 ..... Shut down 1,425 ft.
McNull & Gross' No. 1 Smith, CEL SE NW NE Sec. 11-6s-9e ..... Shut down 375 ft.

MURRAY COUNTY

Alter and others' No. 1 Johnson, SW cor. NW Sec. 14-4-7. Spudded and shut down.

COTTON COUNTY

Cuyler & Pyson's No. 1 Thomas, SE cor. SE SW Sec. 16-4-12w ..... Dry and abandoned 2,127 ft.
Amerada Pet. Corp.'s No. 1 Dulaney, SE cor. NW NW Sec. 31-4-9w ..... Spudded.
Pierce & Brown's No. 1 Hertzler, NW cor. NW Sec. 31-2-12w ..... Shut down 2,452 ft.
Shasta Oil Co.'s No. 1 Pah-pe-chi, NE cor. NE Sec. 34-1s-11w ..... Drlg. 1,800 ft.

JEFFERSON COUNTY

Amerada Pet. Corp.'s No. 1 Emerson, NW cor. SE SW Sec. 28-5s-8w ..... Shut down 4,516 ft

CHOCTAW COUNTY

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19 ..... Shut down 1,346 ft.

TILLMAN COUNTY

Bray and others' No. 1 Barker, NE cor. SW NW Sec. 9-1-15w ..... Shut down 805 ft.
Dixie Oil Co.'s No. 1 McKinney, NE cor. NE Sec. 29-3s-18w ..... Dry and abandoned 3,259 ft.
Stanley & McGregor's No. 1 Mock, NW cor. NW SW Sec. 33-1-20w ..... Dry and abandoned 2,445 ft.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-15w ..... Shut down 2,535 ft.
Allen & Treadwell's No. 1 Howell, NW cor. SE Sec. 13-1-17w ..... Shut down 625 ft.

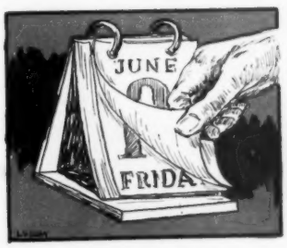
JOHNSON COUNTY

Wapanucka Oil Co.'s No. 1 Banks, Sec. 28-2s-9 ..... Shut down 1,530 ft.
Bush Creek Oil Co.'s No. 1 Kirby, SE cor. NE NW Sec. 9-4-7 ..... Shut down for casing 405 ft.
Smith & Kinsley's No. 1 Lane, SE cor. NW Sec. 29-1-7... Drlg. 1,425 ft., corrected.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e ..... Drlg. 1,176 ft.
Sullivan and others' No. 1 Wines, NW NE NW Sec. 11-7s-5e ..... Dry and abandoned 611 ft.
E. J. Stump and others' No. 1 McGinnis, NW Sec. 26-3s-8w ..... Drlg. 2,545 ft.
McCrow and others' No. 1 Trust, SW Sec. 12-1s-8e ..... Dry and abandoned 1,923 ft.

CARTER COUNTY

Devonian Oil Co.'s No. 1 Myer, NW cor. SE Sec. 19-5s-3w. Fishing 2,976 ft.
Avon-Dickey's No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 ..... Shut down 800 ft.
Schermerhorn Oil Co.'s No. 2 Jolliff, NE NW Sec. 24-5s-1e ..... Drlg. 4,446 ft.
Humble Oil & Ref. Co.'s No. 1 Hitchcock, SE NE Sec. 12-4s-3e ..... Dry and abandoned 1,500 ft.

prepare for tomorrow



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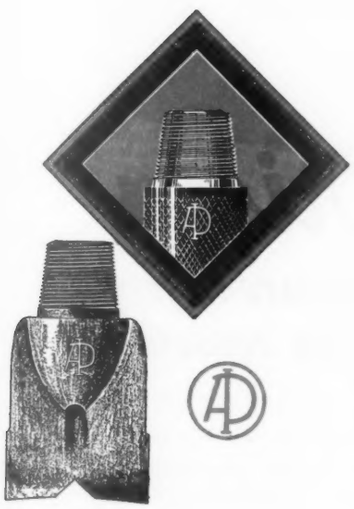

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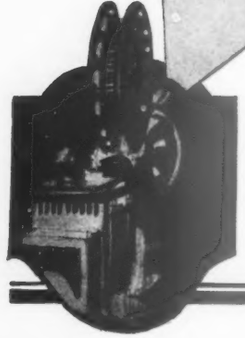


BRANCH PLANT—BEAUMONT, TEXAS

The
PETROLEUM IRON WORKS COMPANY
SHARON, PA.

NEW YORK
CHICAGO
HOUSTON
TULSA

CANADIAN FIELDS

(Continued from Page 53)

tario for 1928 amounted to 134,065 bbls. valued at $249,737. This total was 5,541 bbls. less than in 1927, but 6,638 bbls. in excess of the earlier unofficial estimates, which placed the probable production for the year at 127,427 bbls.

The decrease in production is, according to Commissioner Harkness, due more to the difference in the season than anything else. In cold winters the jerker lines freeze or are buried in snow, forcing many wells to close down temporarily. Producers claim they are operating at a loss, and that, unless the price of crude oil increases or the government bounty is restored, the fields will have to be abandoned.

The small field discovered in 1926 in Camden Township, Kent County, near Thamesville, has failed to maintain its promising flush production. The fields are located entirely in western Ontario, and mostly in the two southwestern counties of Kent and Lambton. The average price for the year was $1.86 a barrel.

Detailed figures for the various pools are as follows, (in barrels):

Petrolia-Enniskillen	60,547
Oil Springs	35,653
Moore Township	2,148
Sarnia Township	1,221
Plympton Township	371
Bothwell	24,255
Dover West	773
Raleigh	no report
Onondaga	87
Moss Township	7,268
Thamesville-Camden	1,009
Dunwich Township	no report
Tilbury East	736
Euphemia Township	no report

A preliminary estimate shows a production in Ontario in 1928 of 7,432,976,000 feet of natural gas, valued at $4,535,312, representing an increase over 1927 of 121,761,000 feet and $203,532 in value. This increase was due to a colder winter and a consequent increased demand for heating purposes. The natural gas companies, according to Colonel Harkness, anticipating the time when the supply of natural gas will fall short of the demand, are preparing to mix manufactured gas with the natural product, thereby saving the natural gas fields from early depletion and maintaining them for many years to enrich the artificial gas. iPlans to this end are now being shaped by the companies. In the past year about 5,000 new consumers were connected to the various natural gas distribution systems. An enabling bill to permit of rate-making for mixed gases is now receiving the attention of the Ontario legislature.

Regent Oil Co.'s No. 1 well, LSD 16, Section 1-20-3w5, in the Turner Valley, was brought into production in the deep lime at 3,860 feet, making 5,000,000 feet of wet gas with potential crude naphtha recovery of 100 bbls. a day.

Royalite Oil Co.'s No. 18, LSD 15, Section 12-20-3w5, is in production in the deep lime at 3,826 feet. Early reports indicated a flow of 15,000,000 feet a day with a potential crude naphtha recovery of 250 bbls., but the flow is apparently increasing and the well seems likely to develop a settled production near 400 bbls. a day. It offsets Illinois-Alberta Oils' No. 1.

Royalite's No. 16, rotary test, LSD 2, Section 12-20-3w5, is in the deep lime around 5,007 feet and is being given a production test. The well offsets McLeod Oil Co.'s No. 3, and looks like a good commercial producer. It got the top of the lime at 4,706 feet. Royalite's No. 15, LSD 1, same section, is reported making around 250 bbls. of light crude from the lower Kootenay at 3,003 feet. Royalite's No. 14, LSD 4, Section 7-20-2w5, is drilling in the deep lime at 3,421 feet with a considerably increased wet gas flow, but not sufficient for a production test.

Royalite's No. 12, LSD 3, Section 13-20-3w5, is drilling at 3,540 feet. Royalite's No. 20, LSD 7, Section 12-20-3w5, is working on a bad hole at 3,020 feet. Royalite's No. 21 is drilling at 2,642 feet. Royalite's No. 23, NW, Section 31-19-2w5, has cemented conductor pipe on bottom at 58 feet.

Foothills Oil & Gas Co.'s No. 2, LSD 8, Section 1-20-3w5, which is to be deepened to the lime, resuming at 3,707 feet, has been cleaned out and mudded off to 3,483 feet. Southwestern Petroleums (Foothills' No. 2) in the south end of the field is cementing conductor pipe at 65 feet.

Making 600 Bbls.

Home Oil Co.'s No. 1, LSD 10, Section 20-19-2w5, is making an average of around 600 bbls. a day from the deep lime. A recent official report covering the operations of the company, which are being carried on by Imperial Oil, Ltd., states that last November the deep lime was reached in No. 1 with cable tools at 5,016 feet, where 6¼-inch casing was cemented. Drilling proceeded with cable tools for about 30 feet into the limestone, where wet gas gave the drillers some difficulties. In view of the danger of the tools freezing in, it was decided to change to a heavy duty diamond drill rig. Drilling with this outfit resumed about the middle of December, and on February 9 a depth of 5,280 feet was reached, when indications pointed to a big gas flow, and the drillers decided to pull out, clean hole, and ascertain the exact situation. Before the stem was out the gas flow made itself evident, and the wet gas was promptly connected with the separator. The well continued drilling itself in till the flow reached around 22,000,000 feet, with a recovery of more than 600 bbls., 74 gravity naphtha. A second separator was installed, with two large pressure tanks to protect against evaporation; and a new pipe line was laid to handle the crude naphtha production to the Royalite lines.

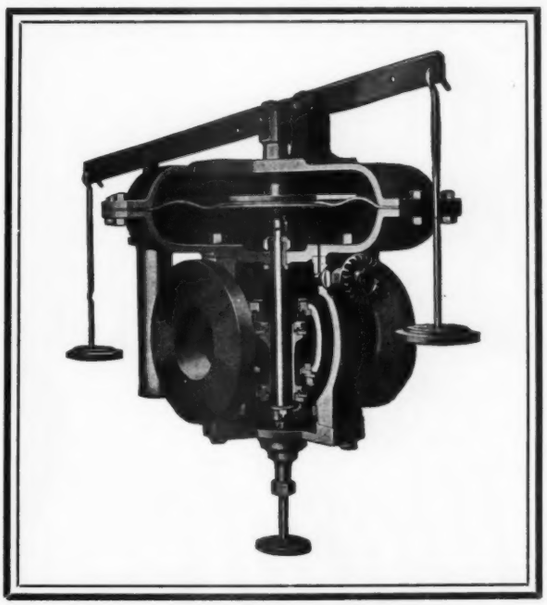
Million Dollar Well

Home's No. 1 continues to average 600 bbls. a day. The flow is not quite uniform, the maximum being around 725 bbls. and the minimum 550 bbls. The production, at $3.95 a barrel, represents around $1,000,000 a year gross revenue, when the sale of gas is also considered. Home Oil Co.'s No. 2, LSD 14, same section, located 700 feet north of No. 1, is reported drilling at 5,222 feet, close to the deep lime; it will be carried to the same producing horizon as No. 1. Home's No. 3, LSD 14, same section, 700 feet south of No. 1, is drilling at 4,674 feet. Home's No. 4, same section, 700 feet north of No. 2, is drilling at 2,438 feet. It is understood the Home Oil Co. has practically completed negotiations for purchase from United Oils, Ltd., of 160 acres close to its present leases, giving it a total of 360 acres in the south end of the field. The entire acreage will be drilled by Imperial Oil, Ltd., under its arrangement with the Home Oil Co. Under the arrangement, No. 1 well goes to the Home Oil Co. outright after reimbursing Imperial Oil, Ltd., for actual drilling costs; subsequent wells reimburse Imperial Oil, Ltd., to the extent of cost plus 10 per cent, after which Home Oil Co. receives 10 per cent royalty on production.

Calmont-Dallas

Calmont Oils, Ltd., whose No. 1 test in LSD 2, Section 1-20-3w5, is in the deep lime at 5,650 feet, is materially extending its operations following a deal whereby it will take over the assets of the Dallas Oil Co. Calmont's No. 1, which was shot late in February, has been cleaned out to 5,630 feet. The wet gas flow is around 1,300,000 feet a day. Calmont's No. 2 has been located on the Dallas leases in the south end of the field, offsetting Home's No. 1 producer, and about 500 feet to the northwest. The location is in the northeast corner of the Dallas lease and almost directly in line between Home's Nos. 1 and 2. Work has been started on cellar and a 122-foot derrick; the test will spud in early this spring, cable tools being used to the lime and the well drilled into production with a diamond drill. Calmont's No. 3 will be drilled in the bed of Sheep Creek, in the central section of the field, between Calmont's No. 1 and Okalta's No. 1.

Dallas Oil Co., which is being taken over by Calmont Oils, Ltd., was organized in 1926. Officers and directors are: President, Fred Johnston; vice president, William Motherwell; secretary-treasurer and managing director, A. G. Clarke; directors, Dr. William Hackney,



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Lieut.-Col. W. Featherstonhaugh, Dr. A. B. Singleton, H. G. H. Glass and H. N. White. The company holds 1,348 acres in the Turner Valley district, 853 acres in Moose Mountain and 1,400 acres in the Milk River district. Its No. 1 well, LSD 11, Section 20-19-2w5, was abandoned at 3,100 feet when it drilled into a fault. The officers of Calmont Oils, Ltd., are: President, Lord Askwith, K. C.B.; vice president, J. C. Dallas; secretary-treasurer, F. C. Birks; directors, Dr. L. A. Maxwell, A. G. Clarke and Ashworth Anderson. Its holdings include 740 acres in Turner Valley, 160 acres in Moose Mountain, 825 acres in the Williams Field, and 1,800 acres in Milk River.

Okalta Oils' No. 1, LSD 1, Section 1-20-3w5, is drilling out a hard limestone bridge formed at 1,380 feet, which shut off a production of 600 bbls. a day. Okalta's No. 3, LSD 9, same section, is drilling around 2,500 feet.

McLeod Oil Co.'s No. 1, LSD 16, Section 1-20-3w5, has been cleaned out and brought back into its normal deep lime production of 110 bbls. a day.

Interesting Test

McLeod's No. 4, same LSD, is drilling at 4,800 feet, approximately 1,050 feet below top of the Madison. The main body of the lime has apparently been passed through, and the present horizon is only partially limestone. The hole is in good shape for deeper drilling, and may be continued a considerable distance, to test the theory, held by a number of Turner Valley operators, that the crude naphtha and wet gas production in the Madison is derived from a lower formation containing a heavier crude oil in large quantities. No. 4 struck a big wet gas flow in the lime itself, but this was apparently a large pocket, and did not last very long.

Regent Oil Co., LSD 16, Section 1-20-3w5, is making new hole at 3,851 feet, 119 feet in the deep lime, with an increasing wet gas flow. Canada Southern Oil Refining Co.'s No. 1, LSD 9, same section, which had a small production in the Dakota at 2,605 feet, has been purchased by eastern interests, and will be deepened.

United Oils' No. 4, LSD 2, Section 24-20-3w5, has finished a new derrick and is fishing for the tools lost when the old derrick burned. The hole is in light crude production in the Dalhousie sand at 5,385 feet, and may be a commercial producer at this depth.

British Dominion Oil Development Corp.'s No. 2, LSD 6, Section 12-20-3w5, is at 3,660 feet and cementing 10¼-inch casing after passing through the second McDougall-Segur sand. The test will be continued to the crude naphtha horizon of the deep lime unless large production is encountered. The lime should be reached at around 4,800 feet, with possibilities of light crude production in the Home sand around 4,300 feet and the Dalhousie sand around 4,500 feet.

Two new tests have been started in the Turner Valley. Midfield Oil Co.'s No. 1, LSD 9, Section 1-20-3w5, midway between Okalta's No. 1 and McLeod's No. 4 has spudded in. D. A. McDonald is in charge of operations, which are financed largely by Toronto and Winnipeg capital. W. S. Linton, J. McRae and C. S. Gunn of Winnipeg are among those interested. In the south end of the field, Mercury Oils has casing and equipment on its location in Section 4-19-2w5, on leases acquired from the Mill City Oils, close to the old Record well.

Outwest Petroleums is reported digging cellar and clearing site for its test on the Black Diamond structure, 1¼ miles west of Okalta's No. 1. This structure is in the general Turner Valley area, but is entirely distinct from the Turner Valley anticline, and separated from the Turner Valley Field by a thrust fault which brings Benton rocks into contact with the top of the Belly River formation, indicating a throw of about 2,000 feet. The folding is less sharp than the Turner Valley, and production possibilities are looked for at shallower depth.

Richfield Petroleum, Ltd., has located its No. 1 test in LSD 14, Section 35-20-4w5, and is working on cellar and camp.

Calfernie Holdings, Ltd., has been incorporated under Dominion charter and office at Calgary. Incorporators are O. Campbell, L. M. Frydekin, B. Kingberg and L. Stendahl, all of Calgary.

Outlying Structures

Possible production in outlying structures fringing on Turner Valley will be tested this season by several outfits. W. S. Herron of Okalta Oils, Ltd., has filed on a large block of acreage along the Elbow River, between Bragg Creek and the Moose Dome, and is organizing a company to undertake development. It is estimated that the first big porous production horizon in the lime will be reached at 2,000 feet on the crest of the anticline and 2,500 feet on the flanks, the drill starting in the Dakota horizon, which in the Turner Valley Field is 2,000 feet or lower. Geological investigation shows that the structure has a northwest-southeast trend, with a deep syncline a mile to the west and to the east a collecting area about 6 miles wide.

Southeast of the Turner Valley, Sterling-Pacific Oils will drill in NE Section 33-18-2w5, 4 miles south and slightly east of the Home wells. Directly east, High River Oilfields will drill in LSD 6, Section 34-18-29w4, close to High River. The High River structutre is the first prairie structure east of the foothills, and except for a gentler fold and absence of faulting is very similar to the foothills structures. A test put down in 1914 on this structure got a small wet gas flow around 500 feet. New Federal Oils, Ltd., will start a test this spring on Gladys Ridge, in the Aldersyde area adjacent to the High River structure.

Hudson's Bay-Marland Oil Co. is reported to have located a deep test in Section 8-17-18w4, near Lomond, in the Champion district, and is unloading a heavy cable duty outfit previously used for the Doherty drilling at Pincher Creek. It is reported that the Hudson's Bay-Marland will drill a second test on an undetermined location between Vulcan and Blackie. The company is drilling the fourth of a series of shallow structure tests on the Keho Lake structure east of Nobleford, and similar tests were drilled in the Champion area before locating the deep test.

Skiff Field

In the Skiff Field, southern Alberta, Imperial-Devenish's No. 3, offsetting No. 1 discovery well, has resumed drilling after cementing casing at 2,947 feet. The oil sand is looked for within 100 feet.

In Milk River district, Alberta Pacific Consolidated Oils is letting a contract for a commercial test. South of the international boundary Western Natural Gas Co. is reported planning to drill three tests in the Sweetgrass Hills area. C SW NW Section 5-37-4e.

In the Cypress Hills Field near Medicine Hat, Eagle Butte Oil Co.'s No. 1, LSD 3, Section 31-7-4w4, has opened a large gas field. Its production at the present horizon, 3,340 feet, is around 40,000,000 feet a day. This has been shut in. The Eagle Butte Oil Co., organized by C. E. Roth and associates of Independence, Kans., drilled on 10,000 acres subleased from the Cypress Oil Co. of Toronto. The latter some years ago blanketed the entire Cypress Hills structure, about 51,000 acres. The Eagle Butte's contract calls for two tests to a depth of 4,000 feet, or 400 feet in the Madison limestone. No. 1 got a fair gas flow, about 1,000,000 feet a day, at 1,184 feet; this flow caught fire, and destroyed the derrick. At 3,340 feet, when the big gas flow was struck, the casing was hanging loose in the hole, being lowered right behind the drill. Water from the upper horizon was blown out with the gas and formed a wall of ice around the derrick, and steam from a 60 horsepower boiler was used to cut through 15 feet of ice, clear the derrick floor so the control head could be put in place. The test was drilled with standard tools and a 6-cylinder gas engine. The water and gas will be shut off and the test carried deeper with standard tools, there being a prospect of oil at the Madison-Ellis contact, around 3,740 feet; while if necessary the test will be carried into the Madison lime the required 400 feet. A tentative location has been made for No.

2 some 3½ miles southeast of No. 1. Imperial Oil, Ltd., is understood to be interested in the two tests. The gas production is to be handled by C. E. Roth and associates, who are planning a pipe line to Moose Jaw and Regina, to cost around $7,000,000. The project will require some 300 miles of 16-inch line and booster stations, as well as distributing systems in both cities, but before it is undertaken additional wells will be drilled to insure an ample supply.

Wainwright Field

In the Wainwright Field, east central Alberta, Wainwell Oils' No. 2, LSD 15, Section 36-44-7w4, is reported to show an increased open flow, estimated around 50,000,000 feet a day. It is understood the Wainwell directorate has an offer from a western company for the entire gas output. The well has been successfully shut in, but gas is being used for the Wainwell Oils refinery. It is still expected to secure oil production from the 9-foot sand encountered in coring. No. 4 well will be drilled on the same structure as No. 2 but about 500 feet northwest; this test will spud in within a few weeks. Wainwell Oils' No. 1, LSD 9, Section 36-44-7w4, which had a good production of heavy crude at 2,072 feet, is being cleaned up preparatory to deepening to the second sand.

Sasko-Wainwright Oil & Gas Co.'s No. 1, LSD 1, Section 19-45-6w4, has been brought in at 2,247 feet, and is reported bailing, with oil standing 875 feet in the hole. It is estimated good for at least 50 bbls., the oil being somewhat lighter than the ordinary Wainwright crude. Associated Refineries, Ltd., recently formed to take over the plant of Gypsy Oils, Ltd., at Wainwright will handle the production.

In the Viking Field, northwestern Utilities, Ltd., will maintain its gas supplies by drilling three tests to the Viking sand this season. In addition, one test will be drilled to the same horizon by the Hudson's Bay-Marland Oil Co. Northwestern Utilities' present open flow capacity of 78,000,000 feet will, it is expected, be increased by a further 20,000,000 to 25,000,000 feet. The company at the end of 1928 served 8,948 gas consumers, chiefly in Edmonton, and an increase of around 850 is expected this year.

LA.-ARK. WILDCATS

(Continued from Page 46)

assembling a block centering on Section 36-21-1w, Union Parish, on the old Farmerville subsurface high. If they drill it probably will be a deeper test than has yet been made in that locality as all previous tests have proven it dry down to the red beds.

Claiborne Parish's remaining wildcat, El Dorado Chief Oil Co.'s No. 1 Baker in Section 26-20-7, probably will be reported next week as a dry hole abandoned at 2,950 feet. It was coring hard sandy lime at 2,940 feet after a drill stem test at 2,935 feet, developed hot salt water. It is understood that the owners are trying to finance another test to the Nacatoch in Section 27, which, if it shows up favorably, would go on to the Blossom.

Arkansas Wildcats

After the McDonald wells on the Wilson land which have opened a new pool in Ouachita County, half way between the Louann light oil district of Smackover and the Stephens Field, Louisiana Oil Refining Corp.'s semiwildcat on the east side of Stephens Townsite, No. 1 Manly, Section 15-15-19, was Arkansas' most interesting well this week. At 2,499 feet it cored what seems to be volcanic ash. Whether it is has not been determined but if it is, the well is checking about 300 feet high on the lower Cretaceous. A drill stem test at 2,171-83 feet resulted in two joints of mud on top of oil, no gas or water, but a second such at 2,365-99 feet developed 15 fourbles of water in 10 minutes, thought to be coming from somewhere between 2,365-85 feet. The well will go 5,000 feet "unless" and on last report was coring again at 2,515 feet without testing anything since 2,395 feet.

South of the McDonald wells, Timberlake and others, of Camden, have a block of 2,500 acres on which they are obligated to start a well before May 1 to go 3,000 feet, probably in Section 25-14-18. In the southeastern part of the county, N. C. Marsh and others of El Dorado have assembled 4,000 acres centering on Section 21-17-11, on which they are obligated to start a well before May 1, to go 3,700 feet.

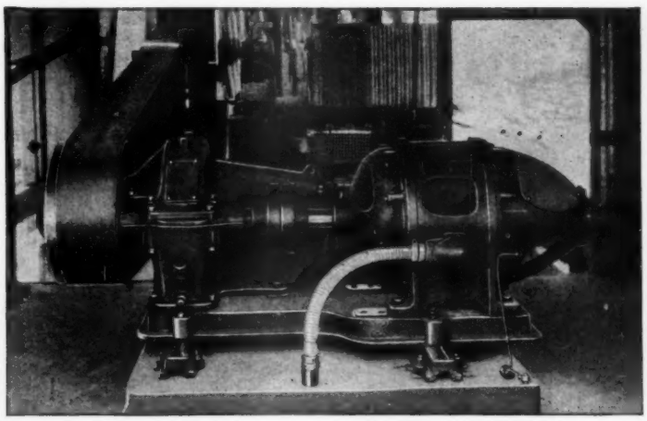
Following the faint trace of oil reported in a core taken at 3,156-59 feet in J. G. Marcum's No. 1 DeYampert, Section 5-19-4, this Ashley County wildcat is reported to have had another show at 3,238-41 feet, but this, too, is contradicted. Whether or not it did, it is the first of the red bed wildcats of the 1928-29 crop that has been distinguished by any such reports and as such is commanding attention to a degree. It is shut down at this writing at 3,265 feet. The Texas Company's No. 1 Keifer, in Section 11-18-4, is shut down at 3,333 feet for fuel.

Backers of a plan to deepen a well on the Bledsoe land in Section 20-15-7, drilled to 2,554 feet by Rhodes and Kirker a few years ago are reported trying a new method of financing the experiment, offering an undivided one-fifth interest in the 4,000-acre block and the well for $2,000 and it is reported the Atlantic Oil Producing Co., Lion Oil Refining Co. and Phillips Petroleum Co. have come in. Standard Oil Co., The Texas Company and Sam Hunter have a block along the Chicot-Ashley line on which they are supposed to drill before long. These three have 40,000 acres or more in Chicot and Ashley Counties on which they have already drilled three dry holes.

Two wildcats in the south central part of Union County are getting under way, both of them north of T. B. Slick's 17,000-acre block across the line in Union Parish, Louisiana. W. M. Coates has location in the SW cor. SW NW, Section 32-19-17 for No. 1 McDuffie, and J. W. Olvey has derrick up in the SW cor. SW NW, Section 22-19-17 for No. 1 Cottrell.

C. H. Willoughby did not set casing on No. 1 Jones, in Section 34-16-30, Washington County, as he was reported planning to do. From what information was obtained it appears he bailed dry in a sand at 926 feet and went on, drilling at last report at 1,115 feet. Independent Oil & Gas Co.'s No. 1 Banks & Teague, Section 6-16-27, is drilling around 250 feet. This location previously reported in Washington County, is in Madison County. W. F. Harris, active in Oklahoma fields 5 or 10 years ago, has blocked 7,500 acres in T3 and 4 R4, St. Francis County, and is rigging up with rotary tools for a test on the Halbert farm in Section 32-4-4, 10 miles southeast of Forrest City to go 1,500 feet, possibly deeper.

Wildcat completions during the week were mostly wells dropped from the Mississippi report after standing for anywhere from a few months to a couple of years or so. However, in addition to the McDonald well in Ouachita County, Arkansas, Magnolia Petroleum Co.'s No. 3 Fortson, Section 4-12-11, DeSoto Parish, was a successful test, gauging 2,000,000 feet of gas from the shallow Naborton pay at 748 feet after setting liner following a test which showed for 1,000,000 feet. Frazier and others abandoned location for No. 1 F. R. Laney in Section 30-19-16, Union County, Arkansas. The Mississippi items were: Town of Calhoun City, No. 1 fee, Section 24-23-9, Calhoun County, fresh water at 1,925 feet; Pure Oil Co.'s No. 1 Stevenson, Section 30-2n-14, Clark County, dry and abandoned at 2,290 feet; D'Lo Development Co.'s No. 3 Finkbine, Section 7-3-4, Rankin County, junked and abandoned at 3,220 feet; O. C. Graves' (Nye Jones and others') No. 1 Kendall, Section 15-2-4, Simpson County, dry and abandoned at 2,852 feet. Semte Oil Co., of Seminole, Okla., drilling on the Jodey Howard farm, 9 miles north of Jackson, Tenn., abandoned the effort at 1,500 feet after failing to pick up a show of any sort, though a well on the same farm drilled several years ago was reported to have



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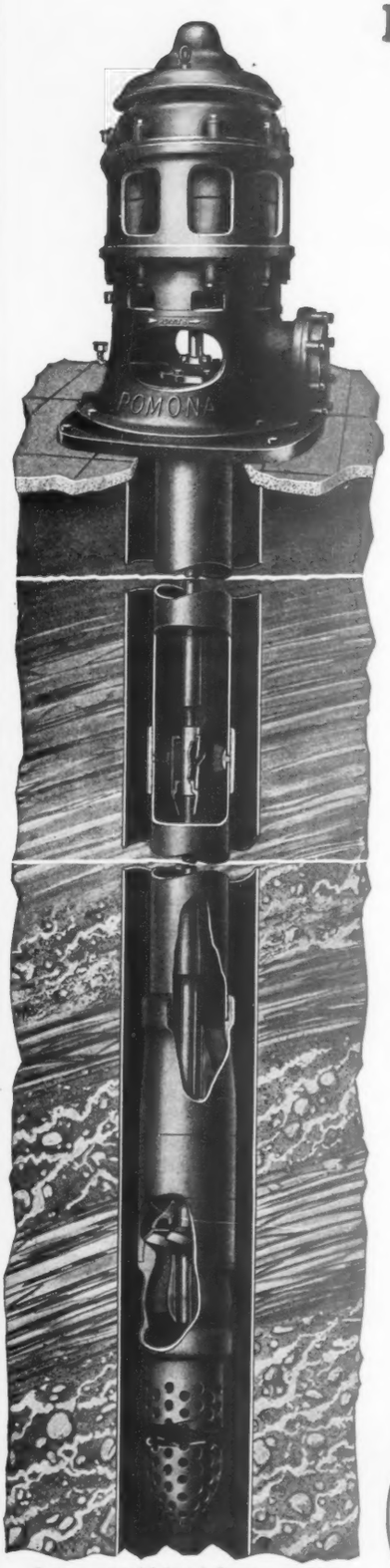

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NORTH LOUISIANA

Bienville Parish

W. P. Wallace cemented 6 inch casing at 2,485 feet on No. 1 State, Section 16-16-10.

Bossier Parish

Corbett and others have rig up 660 feet north and west SE cor. NE Section 18-17-11 for No. 1 Murff. Woodmansee and others are shut down at 2,600 feet on No. 1 Bollinger, Section 9-22-11.

Caddo Parrish

Nemours Corp. has rig up for No. 1 Ellerbe, Section 18-15-12.

Claiborne Parish

ElDorado—Chief Oil Co.'s No. 1 Baker, Section 26-20-7, is coring sand rock at 2,940 feet.

DeSoto Parish

Benedum & Trees Oil Co.'s No. 1 Mahoney, Section 22-14-12, is drilling at 1,800 feet and No. 1 Nicholson, Section 2-15-14, at the same depth. Luke Case's trustee, No. 1 Boatright, Section 3-10-13, is drilling at 2,800 feet. DeSoto Syndicate's No. 1 Holmes, Section 20-13-16, is drilling at 1,500 feet and No. 1 Willims, Section 29-13-11, set 60 feet of 10 inch and is drilling at 800 feet, Magnolia Petroleum Co. has rig up for No. 4 Fortson 660 feet north and east SW cor. NW Section 4-12-11.

East Carroll Parish

Palmer Corp.'s No. 2 O'Brien, Section 6-19-11, set 12 inch at 177 feet and 9 inch at 908 feet.

Grant Parish

Jack Moffat's No. 1 Ball, Section 29-7-1w is drilling red shale at 1,875 feet.

Lincoln Parish

V. E. Shaw set 8 inch at 900 feet on No. 1 Voss, Section 1-20-3, and is drilling at 915.

Monroe District

Morehouse—Woodley & Collins' No. 1 Harp, Section 22-22-7 got the top of the Nacatoch at 2,483 feet and is coring at 2,490.

Ouachita Parish—Phillips and others' No. 1 School, Section 16-16-4, is drilling at 3,403 feet.

Union Parish—J. E. Cammatte's No. 2 Tugwell, Section 21-22-1e, is shut down at 1,845 feet.

Natchitoches Parish

S. D. McDaniels is drilling No. 2 Clark & Morse, Section 23-5-6, at 1,350 feet.

Richland Parish

Richland Operating Co. set 8 inch at 884 feet on No. 1 S. R. Humble, Section 30-16-7, and is drilling at 1,230 feet. Wilson and others' No. 1 Buie, Section 17-15-7, is drilling at 1,115 feet.

Sabine Parish

R. L. Gay's No. 2 Bowman-Hicks, Section 14-7-14, is reported to have had a show of gas and oil in chalk at 2,560 feet and is running a drill stem test; No. 1 Sabine Lumber Co., Section 13-7-14, is drilling at 2,740 feet.

ARKANSAS

Ashley County

J. G. Marcum, trustee, has shut down No. 1 DeYampert, Section 5-19-4, at 3,265 feet, after a reported trace of oil in a core from 3,238-41 feet. The Texas Company's No. 1 Keifer, Section 11-18-4 is shut down for fuel, total depth 3,333 feet.

Calhoun County

Joe Hurley's No. 1 Arkansas Timber Co., Section 29-16-12, is shut down on account of high water, total depth 3,302 feet.

Columbia County

Helena Oil & Gas Co.'s No. 1 Pickley, formerly VonHagen Syndicate, Section 19-19-22, is drilling at 1,400 feet.

Drew County

Ohio Oil Co. is drilling No. 1 Jerome Lumber Co., Section 13-15-4, at 2,245 feet.

Logan County

Arkansas Natural Gas Corp.'s No. 1 Hanna, Section 26-7-23, has rig up to drill; No. 1 Parks, Section 26-8-24, is setting 5 3/16 inch casing at 4,420 feet.

Ouachita County

J. E. Crosbie is coring at 2,610 feet on No. 1 Goodwin, Section 13-15-16. Louisiana Oil Refining Corp. tested three joints of mud and a show of oil from 2,166-83 feet on No. 1 Manly, Section 15-15-19, cored 10 feet of sand showing oil from 2,389-99 and got salt water with no show of oil or gas in drill stem test. Magnolia Petroleum Co. made location for No. 1 Wilson in the NW cor. SE SW Section 25-15-18.

Union County

T. J. Bush, trustee, is drilling No. 1 McDonald Section 11-17-18, at 2,320 feet. W. M. Coats made location 440 feet north and 200 east SW cor. SW NW Section 32-19-17 for No. 1 McDuffie. R. L. Foster's No. 1 Smith, Section 8-16-17 is drilling around 150 feet. J. O. Moore, trustee, is drilling at 1,320 feet on No. 1 Union Sawmill, Section 11-18-12. J. W. Olvey has derrick up for No. 1 Cottrell 130 feet north and 170 east SW cor. SW NW Section 22-19-17. Thornton and others' No. 1 Stowe is a derrick 165 feet south and 150 east NW cor. NW SW Section 4-17-13.

Madison County

Independent Oil & Gas Co. is drilling at 225 feet on No. 1 Banks & Teague, Section 6-16-27.

Washington County

C. H. Willoughby did not set casing and test sand at 936 feet on No. 1 Jones, Section 34-16-30, as reported he would do, and is drilling at 1,115 feet.

EAST TEXAS

Shelby County—Gulf Refining Co. tested 53,000 feet of gas on drill stem test at 3,203-4 feet on No. 1 Carraway, J. H. Patterson survey, cored sandy lime from 3,114-18 feet and is coring again at 3,217 feet.

MISSISSIPPI

Alcorn County — Alcorn Petroleum Co.'s No. 1 Matthews, Section 14-2-7, is shut down at 1,983 feet.

Chickasaw County—Hightower and Goldstein's No. 1 Davis, Section 20-13-3, is shut down at 1,162 feet.

Hinds County—Hennessee and others are drilling at 540 feet on No. 1 Riverside, Section 23-16-5. Reeder and others' No. 1 State, Section 25-6-1e, is shut down at 2,300 feet during litigation.

Lauderdale County—F. X. Gowens and others have rig up for No. 1 Houser, Section 33-8-18.

Lincoln County — Louisiana-Mississippi Land and Oil Co. started drilling No. 1 Case, Section 21-8-6e and shut down at 50 feet.

Monroe County—Amory Natural Gas Co.'s No. 2 Carter, Section 7-13-17, is drilling at 950 feet. Arkansas Natural Gas Corp.'s No. 1 Rye, Section 33-15-17, is reaming at 2,920 feet, total depth 3,074.

Rankin County—Lion Oil Refining Co. set 12½ inch at 63 feet on No. 1 Misterfeldt, Section 2-4-1e and is moving in a heavier rig.

Sharkey County—Atlantic Oil Producing Co.'s No. 1 Houston, Section 30-11-6 is drilling at 3,261 feet.

Warren County—Williams and others have derrick up for No. 1 Fee in Section 29-17-4.

Yalobusha County—F. E. West and others have derrick up for No. 1 James in Section 19-11-5.

ALABAMA

Washington County—S. A. Hobson's No. 1 Hobson fee, Section 9-8-2, is shut down at 325 feet for title work; No. 1 Wilson, Section 27-7-1w set 10-inch at 130 feet and is drilling at 410.

WEST TENNESSEE

Decatur County—Standard Oil Co. of La. is drilling No. 1 Wyatt in hard gray lime at 485 feet.

Fayett County—Donlan & Berry, of Memphis, have location in the center of the R. C. Connor farm a mile and a half north of Laconia, for a well to get under way not later than April 15.

LOUISIANA-ARKANSAS

(Continued from Page 46)

19-3, for No. 7 Tubbs. LaDel Oil Properties' No. 46 fee, Section 6-19-5, cemented 6-inch at 2,139 feet. Magnolia Petroleum Co. has derrick up for No. 1 fee, Section 14-18-4, and is shut down at 2,200 feet waiting orders on No. 1 United States, Section 18-19-5, after testing

500,000 feet of gas. Maury Drilling Co.'s No. 5 McEwen, Section 29-19-4, set 12½-inch surface string at 190 feet. Ouachita Natural Gas Co.'s No. 1 Dandidge Patton, Section 15-20-4, set 8-inch at 852 feet.

Palmer Corp. is drilling shale at 1,636 feet on No. 6 fee, Section 24-19-4. Peerless Carbon Co.'s No. 4 Moore, Section 26-20-4, is making hole, total depth 2,123 feet. United Carbon Co. made location for No. 1 Ave Arent, 660 feet south and west NE cor. Section 14-19-3. United Oil & Natural Gas Products Co. of Louisiana's No. 2 Cole, Section 26-20-4, is a derrick.

Union Parish—Industrial Gas Co. set 169 feet of 10-inch on No. 1 Cook, Section 12-20-3, and is drilling at 800 feet. Imperial Oil & Gas Products Co.'s No. 1 Stripling is a location 959 feet west and 361 feet north SE cor. Section 8-20-4. Natural Gas & Producing Co. made location for No. 1 Nolan, 1,400 feet west and 660 feet south NE cor. Section 11-20-3.

Red River Parish

C. H. Tuttle has derrick up for No. 1 fee, Section 17-13-10, Bull Bayou district.

Richland Parish

Magnolia Petroleum Co. set 200 feet of 16-inch surface pipe on No. 1 C. M. Noble, Section 36-16-5, and has derrick up for No. 1 Sartor Co., in Section 5-15-6. Northern Louisiana Natural Gas Co. is drilling at 1,592 feet on No. 1 Hemler, Section 22-16-6.

Webster Parish

Cotton Valley — Magnolia Petroleum Co.'s No. 4 Irg Cox, Section 23-21-10, is in anhydrite at 4,400 feet; No. 6 Marshall, Section 21-21-10, cemented 10-inch at 3,503 feet and No. 1 McCook & Hibbler, Section 22-21-10, is fishing for bailer, total depth 4,677 feet.

Sarepta-Shongaloo—J. W. Clark's No. 2 Mayfield, Section 20-23-9, is standing 600 feet in oil from 4 feet of sand, total depth 2,767 feet. Pat Hudson set 280 feet of 10-inch on No. 1 Slack, Section 1-22-11, and is drilling at 480 feet. Magnolia Petroleum Co.'s No. 1 Cook, Section 2-22-11, got salt water and a show of gas on drill stem test at 2,693 feet and is coring at 2,703 feet; No. 1 Denman, Section 1-22-11, cemented 5⅜-inch casing at 2,715 feet, total depth 2,719 feet. Nemours Corp.'s No. 1 Munn, Section 1-22-10, is drilling 6-inch plug, total depth 2,610 feet.

ARKANSAS

Johnson County

Arkansa s Natural Gas Corp. is pulling 10-inch casing which collapsed after setting at 1,515 feet on No. 2 Bynum, Section 12-10-24, and will reset at 2,300 feet; No. 1 McPherson, Section 10-10-24, is drilling shale at 2,910 feet.

Ouachita County

Smackover—Gulf Refining Co. had a show of oil and gas with salt water at 2,573 feet in No. 8 Goodwin, Section 32-15-15, total depth 2,590 feet. Simms Oil Co.'s No. 11 Hildebrandt, Section 33-15-15, is fishing for drill stem, total depth 3,140 feet.

Union County

El Dorado—Gulf Refining Co. has rig up for No. 1 Cook, Section 1-18-15. Standard Oil Co. is bailing to test No. 5 Burns, Section 31-17-15, total depth 2,207 feet.

Champagnolle—Lion Oil Refining Co.'s No. 2 Kelly, Section 9-17-14, is drilling at 2,215 feet. Magnolia Petroleum Co. cemented 5⅜-inch at 2,849 feet to test 6 feet of sand in No. 3 A. Gregory, Section 15-17-14, total depth 2,855 feet. Ohio Oil Co.'s No. 1 Adams, Section 7-17-13, is coring at 3,183 feet.

Oilwell Corp.'s No. 1-D Perdue, Section 9-17-14, was junked at 700 feet, skidded 20 feet north and set 10-inch at 120 feet on the second hole and is drilling at 1,500 feet. Rovenger Oil Corp.'s No. 2-B Perdue, Section 9-17-14, was dry at 3,215 feet and tested salt water at 3,310-16 feet. Skelly Oil Co. is reaming to make a drill stem test from 2,785-2,807 feet on No. 2 Kelly, Section 9-17-14.

Smackover—Lovett and others' No. 1 Goodwin & Stone, Section 3-16-16, shut down at 2,100 feet after a show of oil, is drilling at 2,210 feet. Sam Richardson's No. 7 Lawton, Section 10-16-15, cemented 6⅝-inch at 2,035 feet.

EAST TEXAS

Harrison County — Nick Barbare is drilling at 2,250 feet on No. 1-A Bahan-Furrh in the James Short Survey and has rig up for No. 1 Fuller-Furrh. Eureka Natural Gas Co. is pulling liner to deepen No. 1 Timmons in the R. W. Bedford Survey, total depth 1,894 feet. C. H. Lyons' No. 2-A Bryson, Joel Lipscomb Survey, is drilling at 2,250 feet.

Panola County—Calatex Oil & Gas Co.'s No. 4 Agurs, J. Womack Survey, is shut down at 2,009 feet. Nemours Corp.'s No. 1 Johns, W. H. Wooley Survey, cut casing at 1,800 feet, total depth 2,009 feet. Eureka Natural Gas Corp. is in chalk at 1,350 feet on No. 3 Gully, James Matthews Survey and No. 4 is drilling around 150 feet. Magnolia Petroleum Co. set 200 feet of 13⅜-inch surface pipe on No. 3 T. C. Adams, James Matthews Survey, and is drilling lime at 2,500 feet on No. 4 Ella Baker in the B. C. Jordan Survey; No. 3 Lula Fletcher, same survey, set 13⅜-inch at 178 feet and is drilling at 600 feet and No. 15 Steele, same survey, is in lime at 2,553 feet.

GULF COAST

(Continued from Page 50)

drilling. This test has been shut down at 3,847 feet. Standard Oil Co.'s No. 1 Schwing, Bayou Blue, is standing with casing cemented to test sand at 3,633-48 feet. This company's No. 2 Wilbert, Bayou Blue, has been rigged. No. 3 Wilbert is still a location pending dredging of a canal to the location. A derrick is up for No. 2 Schwing. Union Sulphur Co.'s No. 3 Schwing, Bayou Des Glaise, is standing at 3,678 feet.

Jefferson Davis Parish—Vacuum Oil Co.'s No. 1 DiVilbiss, Roanoke prospect, is drilling sticky shale at 5,198 feet. The latter's No. 1 Earle is drilling gumbo at 4,080 feet.

La Fourche Parish—Gulf Refining Co. has rigged up for No. 10 Stark, Thibodaux, with No. 9 being abandoned in rock at 1,390 feet. Union Sulphur Co.'s No. 1 Dilbert and others, same dome, is drilling lime and sulphur at 1,175 feet. No. 2 is driling salt at 1,608 feet.

Barbers Hill—Chambers County

Joe Bashara's No. 1 Tarbutton, southeast flank, is drilling shale at 5,136 feet. Mills Bennett Production Co.'s No. 2 Smith is drilling gumbo at 1,435 feet. The latter's No. 2 Kirby is trying to sidetrack at approximately 5,360 feet, and its No. 1 Means is drilling shale and lime at 4,714 feet. Humphreys Corp.'s No. 6-B Kirby is fishing 3-inch pipe. Rexall Petroleum Co.'s No. 1 Shaw is being rigged up to pump having oil standing in the hole from sand at 2,066 feet. Charles J. Unice has a rig up for No. 1 Feldman.

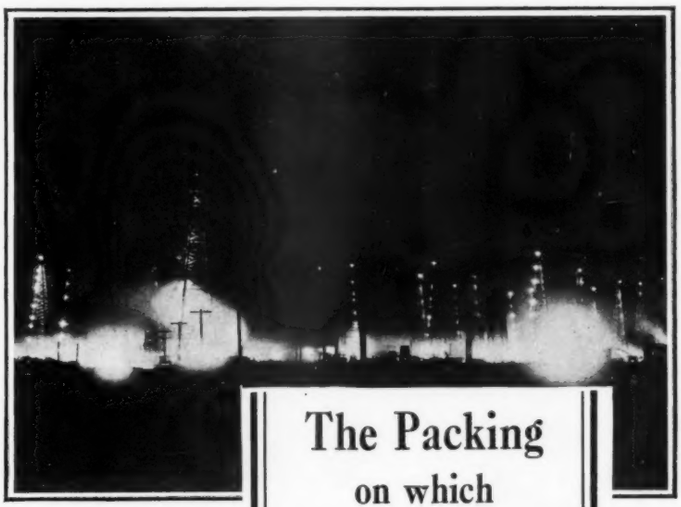
On the southwest flank, Gulf Production Co.'s No. 1 Fisher fee is drilling gumbo at 4,520 feet. Sun Oil Co.'s No. 1 Chambers is drilling gumbo at 3,716 feet. Yount Lee Oil Co.'s No. 2 Chambers is drilling lime rock at 4,955 feet. The latter's No. 3 Chambers is drilling shale and lime at 4,588 feet and its No. 4 Richardson is in hard sand at 2,154 feet.

Mills Bennett Production Co.'s No. 1 Barber, north side, is changing to a heavy rig. It is at 1,569 feet.

Boling—Wharton and Fort Bend

Scott & Peck's No. 1 Armstrong, northeast flank, is drilling sticky shale at 4,655 feet. South Texas Petroleum Co.'s No. 1 Fotjek-Hyde is drilling shale at 4,077 feet. Sun Oil Co.'s No. 4 E. C. Farmer bailed salt water at 3,892 feet and is to be abandoned. The latter's No. 2 Rogers is drilling sand and shale at 4,144 feet. The Texas Company has abandoned its No. 1-A Dipple in heaving shale at 3,983 feet. No. 1-B Dipple has set 6⅝-inch casing at 3,731 feet. No. 1 Pleasants is drilling sand and boulders at 1,234 feet. No. 2 E. C. Farmer is reaming at 3,265 feet.

Vacuum Oil Co.'s No. 1 Taylor, south



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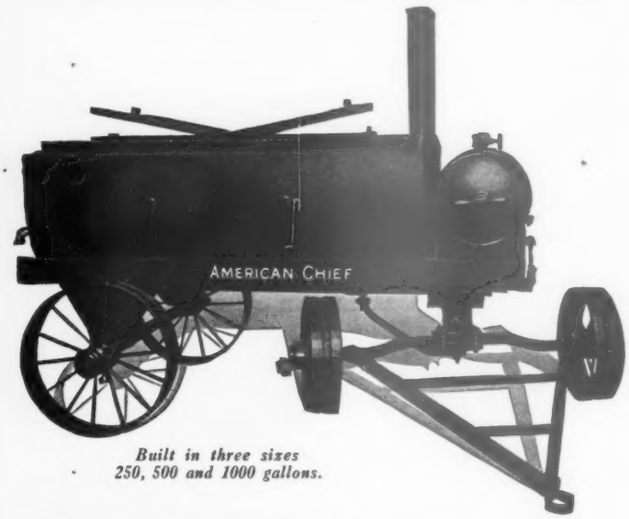

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side, is being rigged up to pump at 2,920-42 feet.

Raccoon Bend—Austin County

Humble Oil & Refining Co.-Valley Oil Corp.'s No. 3 Urban is drilling shale and lime at 2,565 feet. No. 3 Hardie is drilling shale at 843 feet. No. 4 Hardy is a location. No. 1-C Grawunder is being rigged up to pump with the bottom of the hole in oil sand at 3,381 feet. No. 1-D Grawunder, drilled to 1,101 feet, lost the hole and is sidetracking at 1,067 feet. No. 1 J. W. Wilson is drilling sand and rock at 2,680 feet. No. 3 E. B. Wilson is drilling hard sand at 1,079 feet. No. 2 Dietrich is drilling shale at 2,150 feet. No. 1 Sherrill is drilling sandy shale at 2,874 feet; No. 3 Roy Thompson, sand at 1,120 feet; No. 2 E. Kearns, gumbo at 2,920 feet and No. 2 Saunders, sand at 520 feet. No. 2-A Washington, No. 1 Buchanan, No. 1 Mueller and No. 1 Wilson heirs are rigged up.

DeWalt—Fort Bend County

Humble Oil & Refining Co.'s No. 5 Sugarland is drilling sandy shale at 3,547 feet. No. 6 Sugarland is drilling gumbo at 1,268 feet. No. 3 Camp is a derrick. No. 2 Nelson is drilling lime and boulders at 864 feet. No. 2 Brazos Farms is drilling shale at 3,240 feet; No. 3 Brazos Farms is shut down temporarily at 3,206 feet while repairing derrick. No. 4 Brazos Farms is in gumbo at 1,402 feet. No. 5 Brazos Farms is drilling sand at 1,120 feet. No. 1-A Bankers Mortgage is drilling gumbo and lime at 2,125 feet.

Humble—Harris County

South Texas Petroleum Co.'s No. 3 Morris, south side deep test, which blew in Friday flowing a heavy volume of oil for several hours and then sanding up, is being cleaned out in an attempt to set screen. This is in a sand at a total depth of 4,831 feet. The oil tested 42 gravity. The Texas Company's No. 39 Stevenson, offsetting the Morris tract to the north, is waiting on 9¼-inch casing cement at 3,818 feet to set. It is at a total depth of 4,002 feet. Humble Oil & Refining Co.'s No. 1 Williams on the tract just to the west is rigged up. On the north side of the field, The Texas Company's No. 22 House is drilling hard sand and shale at 4,380 feet. No. 14 Koehler is standing after trying to sidetrack a junked hole at 2,915 feet.

Blue Ridge—Fort Bend County

Humphreys Corp.'s No. 5 West-Schenck, south side of Blue Ridge, which is making a test in heaving shale, still has been swabbing and bailing but is delayed by a stuck bailer. Total depth of the hole is 4,190 feet. It showed oil in the heaving shale at 4,171-81 feet. Moody Corp.'s No. 6 West-Schenck, same district, is drilling at 4,312 feet. On the east side of the dome, Gulf Production Co.'s No. 7 Invincible is drilling at 2,542 feet and the same company's No. 17 Bassett Blakely at 2,010 feet. Gulf also has a derrick up for No. 15 Luscher. South Texas Petroleum Co.'s No. 1 Blakely, an old well to be worked over, is pulling screen.

Navarro Oil Co.'s No. 6-B Robinson, northwest side, is drilling gumbo and lime at 1,690 feet. Blakely & Mean's No. 2 Blakely, north side, is drilling at 2,767 feet.

Big Creek—Fort Bend County

The Texas Company has abandoned as a junked hole its No. 4 Wheat. The bottom was is heaving shale at 3,821 feet. Navarro Oil Co.'s No. 3 Davis is drilling broken shale and lime at 1,208 feet. Gulf Production Co.'s No. 52 Davis is drilling gumbo and boulders at 1,919 feet. Its No. 31 Davis, a workover, is trying to clean hole.

Pierce Junction—Harris County

Navarro Oil Co.-Texas Exploration Co.'s No. 14 Dooley, east flank of the dome, is drilling in sandy shale showing oil at 4,570 feet. These operators' No. 4 Dooley is in gummy shale and lime at 3,765 feet. Navarro Oil Co. and Humble Oil & Refining Co.'s No. 2 Dooley is drilling sand showing oil at 3,862 feet. Gulf Production Co.'s No. 28 Taylor is drilling below 2,271 feet. The latter company also is starting two more tests, No. 29 Taylor and No. 8 Cain. The former is an offset to Moody Corp.'s No. 4-B Settegast, on the southwest flank. Its No. 2 Fitzsimmons-Hamman on the northeast still is attempting to complete. It is the well which blew in a couple of weeks ago at 4,522 feet making a considerable volume of fluid and a high gas pressure for several hours before sanding up. T. G. Shaw and Texas Exploration Co.'s No. 2 Fitzsimmons-Barrow, same district, is drilling below 3,963 feet.

On the west side, Rio Bravo Oil Co.'s No. 12-A Settegast is drilling rock at 2,907 feet. Same company's No. 12-A which lost the hole after drilling to 4,093 feet, is drilling in sidetracked hole at 964 feet in sand. This company's No. 7-B Settegast, a workover, is sidetracking the former hole at 1,607 feet. Reece Wolfe's No. 1 Herman estate is drilling hard lime at 3,458 feet, and Pure Oil Co. is rigged up and spudding on its No. 1 Herman estate.

Moody Corp.'s No. 4-B Whitehead is drilling hard lime at 3,896 feet. The latter also is rigging up to deepen No. 3 Hume. Anderson & Plummer's No. 5 Whitehead is drilling shale at 2,795 feet.

Goose Creek—Harris County

Humble Oil & Refining Co.'s No. 73 Simms-Smith, a deep wildcat test, north of the field, is drilling sandy shale at 3,316 feet. Gulf Production Co.'s No. 13 Beaumont is drilling at 2,102 feet, and the latter's No. 25 Ashell-Smith is at a total depth of 3,557 feet. Russell Farrell's No. 5 Gillette is drilling sidetracked hole at 1,878 feet.

Liberty—Liberty County

With the completion of the second well in the new shallow sand pool, operators at South Liberty again are becoming active. In that new pool district, Fort Bend Oil Co. is rigging up for No. 2 Reviere following the completion of No. 1 flowing 250 bbls. daily initially. Humble Oil & Refining Co. is spudding in on No. 3-B Reviere and has a rig up for No. 4-B, same tract. Navarro Oil Co., which opened the field on its Baldwin Community tract, has started drilling on its second test and has rigged up on No. 3. Vacuum Oil Co. has started drilling on No. 11 Barrett.

In the other shallow sand pools further north on the dome, Sun Oil Co. completed its No. 39 Mitchell at 1,776 feet flowing 500 bbls. and is drilling at 1,272 feet on its No. 40 and at 1,467 on No. 41.

Vacuum Oil Co.'s No. 1 Trinity River on the northwest flank of the dome, which has been bailing all week, so far has not flowed but is standing in oil so will be rigged up to pump. It is in sand at 3,531 feet. The Texas Company's No. 3 Pickett, same district, is drilling sticky shale at 4,200 feet. The latter's No. 5 Green has been rigged up and is ready to spud.

In the deep sand on the east flank, Yount Lee Oil Co. has started drilling in No. 16 Mitchell, north edge. Gulf Production Co.'s No. 1-A Deussen, a workover, is pumping considerable salt water with some oil at 3,275 feet.

Spindletop—Jefferson County

Yount Lee Oil Co.'s No. 29 McFaddin, a workover, is drilling sand and lime at 4,554 feet. No. 94 McFaddin is drilling sand and lime at 4,179 feet, No. 96 McFaddin gumbo and lime at 1,402 feet, No. 97 gumbo at 2,412 feet, No. 5 Gladys City, a workover, shale and lime at 3,478 feet, No. 74 Gladys City sand and lime at 5,627 feet, No. 76 Gladys City sand and lime at 4,963 feet, No. 80 Gladys City at 4,050 feet, No. 83 Gladys City shale and lime at 2,381 feet. A rig is up for No. 84 Gladys City and No. 6 fee, a former well, has been rigged up to deepen.

Nash Dome—Fort Bend and Brazoria

Rycade Oil Corp. and Humble Oil & Refining Co.'s No. 1 Wisdom, south of production on the south flank, is swabbing showing some oil and water. It has some 200 feet of strainer set at a total depth of 5,602 feet. Rycade Oil Corp. also is working over on its No. 2 Wisdom, coring a hard sand showing oil at 4,267 feet.

Hardin County Domes

At Saratoga, Rio Bravo Oil Co.'s No. 106 B.B.B.&C. is drilling gummy shale and lime at 2,550 feet. West Production Co.'s No. 1 Baker, Saratoga, is drilling hard lime at 1,347 feet. E. W. Skinner's

No. 2 Sissler, same field, is drilling below 1,816 feet.

At Sour Lake, derricks are up for two more shallow tests, Minor Oil Co.'s No. 85 fee and Gilbert Oil Co.'s No. 106 fee.

Two shallow tests at Batson, Ada Belle Oil Co.'s No. 126 Paraffine and Deutser Oil Co.'s No. 19 trustee, are nearing the pay sand there.

SOUTH LOUISIANA

Hackberry—Cameron Parish

On the south side of the old Hackberry Dome, Cameron Oil Co.'s No. 3 Duhon is flowing by heads at the rate of 50 bbls. daily from sand at 3,078 feet. This is on the same tract on which the discovery well of the dome was brought in a couple of months ago flowing 250 bbls. daily. Coastal Oil Co.'s No. 1 Duhon is drilling hard sand at 3,103 feet. Federal Petroleum Co.'s No. 1 Kaough has a sand showing oil at a total depth of 3,240 feet and has cemented 6⅝-inch casing at 3,177 feet to test. No. 3 Kaough is drilling heaving shale at 3,280 feet and No. 4 is in sand and gravel at 964 feet. This company's No. 1 Duhon is drilling gumbo and lime at 2,700 feet and derrick is up for No. 2. Rex Petroleum Co.'s No. 1 Vincent is drilling gumbo at 1,903 feet. Sun Oil Co.'s No. 1 Vincent is drilling rock at 3,031 feet and its No. 2 Vincent is in gumbo and boulders at 1,776 feet. Yount Lee Oil Co.'s No. 2 Vincent is drilling sand and shale at 2,382 feet and the latter's No. 1 Kaough is in shale at 1,315 feet. Pure Oil Co. has derricks up for Nos. 1 and 2 Duhon.

On the west side of old Hackberry, Rycade Oil Corp. and Humble Oil & Refining Co.'s No. 1 Gulf Land (joint test) is drilling gumbo at 3,440 feet. No. 2 is rigged up.

Calcasieu Oil Co.'s No. 5 Dorion, East Hackberry Dome, is sidetracking at 1,567 feet. The Texas Company's No. 4-B Calcasieu Lake, East Hackberry, is down 1,341 feet where 10-inch surface casing has been set.

Lockport—Calcasieu Parish

Shell Petroleum Corp.'s No. 1 Miller is drilling sticky, sandy shale at 2,877 feet. Vacuum Oil Co. still is trying to sidetrack hole in No. 13 Miller preparatory to deepening it. The latter's No. 20 Miller is being rigged up to pump at 3,750 feet. No. 24 Miller has drilled to 1,009 feet where 13⅜-inch surface casing has been run. No. 4-A Farquahar is drilling gumbo at 5,502 feet. No. 1 Henshaw-LeMoin is drilling hard sand rock at 5,829 feet and No. 5 Bayou-D'Inde is drilling sand rock at 1,533 feet.

Bayou Bouillon—St. Martin Parish

Rycade Oil Corp. is pulling casing to abandon No. 2 Atchafalaya fee and is moving the rig to No. 7 Bouillon fee. No. 6 Bouillon fee is in a sand showing oil at 3,077 feet, and No. 8 is drilling sandy shale at 3,475 feet. No. 2 Bouillon fee is to be worked over. It formerly was completed as a small pumper. No. 3 State is drilling at 1,094 feet.

Jennings—Acadia Parish

Jennings Petroleum Co.'s No. 2 Eunice-Crowley has set strainer to test an oil showing sand at 4,208 feet. E. F. Simms has abandoned his No. 1 Grace Von Schuler in heaving shale at 5,190 feet. Yount Lee Oil Co.'s No. 6 Housierre-Latrielle is drilling shale at 6,250 feet. The latter's No. 4 Crowley is drilling sand and shale at 5,230 feet.

CALIFORNIA FIELDS

(Continued from Page 56)

feet. The smallest was No. 2 MacCrate of the Italo Petroleum Corp., which showed an initial of 65 bbls. daily from 5,930 feet. The output of other current completions ranged between these two extremes, with No. 8 Patton-Wilson of the Shell the most satisfactory. This new well, which was carried down to 6,672 feet and finished with a 5¾-inch oil string carrying 1,075 feet of perforated, tanked 2,665 bbls. during the initial 24-hour test. No. 2 Rose of the Shell was also a satisfactory completion, although it only tanked 1,170 bbls. daily from 7,088 feet. Warren & MacCrate's No. 1 Dugan required several days to clean up upon completion at 6,771 feet but this new producer ultimately built up to 1,895 bbls. and has been maintaining this rate for the past several days.

Dabney & Johnson finished two new wells in the Long Beach Field during the past week but neither of them, however, was unusually large. No. 27, finished in the shallow zone at 4,790 feet with a string of 10¾-inch landed and cemented at 4,409 feet, tanked 615 bbls. of oil upon completion but the output is showing an excessive water cut and may result in the hole ultimately being deepened. No. 18 was carried down into the Miocene at 7,007 feet and finished with a 4¾-inch combination string carrying 507 feet of perforated and cemented through perforations at 6,500 feet. It came in under a natural flow doing 745 bbls. daily but built up a short time later to 940 bbls. The Macmillan Petroleum Corp. completed its No. 8 Long Beach in the shallow sand at 4,539 feet during the early part of the month but the output, 265 bbls., is still cutting approximately 50 per cent water and will consequently require additional work before being listed as a satisfactory completion. The Chiksan Oil Co. finished No. 2 Clarke, a new well, last week doing 710 bbls. daily from 6,200 feet and the crew from this project was immediately transferred over to No. 4 Robertson, a former shallow zone producer at 4,485 feet, which is being rigged up to deepen.

Rosecrans

The Barnsdall Oil Co. successfully recompleted No. 8 O'Dea in the Rosecrans Field of Los Angeles Basin after redrilling and deepening it to 5,982 feet, from which depth it was returned to production flowing 850 bbls. of clean 38.1 gravity oil daily. The Barnsdall has one other drilling project, No. 5-A Rosecrans, under way in this field at the present time, in addition to rigs for Nos. 3-A O'Dean and 3-A Rosecrans. The Union, which jointly holds acreage in this field with the Barnsdall, is working on three holes, Nos. 10, 11 and 12, on the Rosecrans lease but none of this trio is expected to be completed within the next few weeks. Production of the Barnsdall and Union in this field aggregates 5,250 bbls. out of a total field production of 6,500 bbls. per day, the former producing 3,750 bbls. and the latter 1,500 bbls.

Deep-zone exploitation at Santa Fe Springs and the intensive town lot drilling campaign under way at Lawndale has diverted attention away from the older fields of Los Angeles Basin and has consequently had a pronounced tendency to reduce drilling operations and extension work. This condition prevails at Brea Olinda, Huntington Beach, Montebello, Richfield and practically all other southern districts. New wells are completed in these areas from time to time, however, due to lease obligations which specify a minimum amount of drilling, and also of the necessity of preventing drainage where offsetting property is being developed. This condition was responsible for the completion of two new wells during the current week but neither, however, was of any special consequence. At Huntington Beach the Union finished No. 23 Copeland at 4,200 feet, but this new well failed to respond with a natural flow and it was accordingly put on the beam. That the sand in this particular area is depleted is evidenced by the fact that the initial pumping only aggregated 95 bbls. daily, 26 per cent of which was water. The St. Helens Petroleum, which has been obliged to engage in offsetting work on its Monterey lease in the Montebello Field because of the Standard Oil Co.'s drilling operations on adjoining acreage, finished No. 17 Monterey in the upper zone at 3,640 feet, from which depth it started off pumping 165 bbls. of 20.2 gravity oil showing the usual water cut incident to edgewater encroachment at this point.

Seal Beach

Although the Seal Beach Field of Los Angeles Basin is not scheduled to witness a revival of drilling operations at this time, the Associated, Marland and Standard are all engaged in prosecuting a normal development program involving a total of 18 new wells and former upper zone producers which are being deepened to the lower horizon. During the past

(Continued on Page 136)

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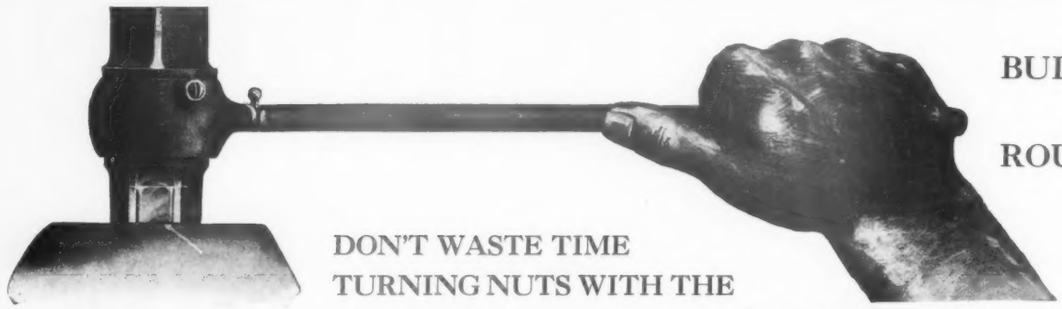

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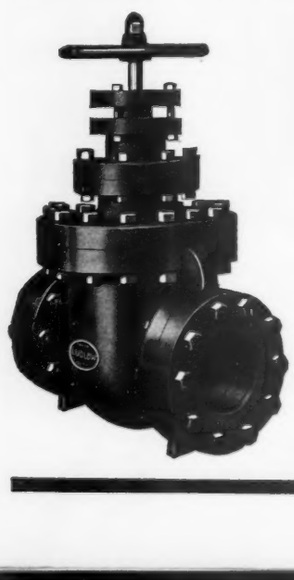

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Practical Suggestions in Refining

By W. T. Ziegenhain

Use Gas Separator on Pressure Distillate To Decrease Losses

The use of an ordinary oil and gas separator such as employed in the production fields to separate the natural gas from the crude has been found advantageous at the Derby Oil & Refining Co.'s plant at Wichita, Kans., on the pressure distillate run-down line. The separator practically relieves the tank of the duty of this separation. Where the gases are rich in hydrogen sulphide or other corrosive gases, the tank roof is rapidly eaten through. A separator minimizes the duty of the tank in this respect and while it too becomes corroded, its parts can be more easily and cheaply replaced.

In the matter of evaporation losses, the separator will show a substantial savings, although no direct comparison was available in this case. The savings would be based on the fact a separator is naturally a more efficient piece of equipment than simply a tank in bringing about the separation of the gas and oil and where the run-down line goes to the bottom of the tank, the gas carries off a large proportion of gasoline with it mechanically. If the gas is processed through a vapor recovery system it will be returned, but there is an added processing cost, and if there is no vapor recovery system, the separator proves to be very advantageous.

USE RUBBER DEVICE TO PROTECT THERMOMETERS

Broken thermometers represent a large share of the laboratory expense and a suggestion contained in the Baker Analyst explains how a rubber hose may be perforated and slipped over the bulb of the thermometer as a protector and will eliminate much of the breakage.

The accompanying diagram is selfexplanatory. The protector is made up of two sizes of rubber hose. The smaller sized hose serves as a collar at A to hold the larger, perforated hose and the small piece of hose at B supports the thermometer when resting on the bottom of the container. This method of protection is particularly well adapted where stirring and temperature readings are taken. It would not be applicable with oil because the rubber would dissolve. The new equipment would find a wide use in the refinery research laboratory.

TIDE WATER INSURANCE

The management of the Tide Water Oil Co. because of the many requests from employes has reopened the group life insurance. All employes who are eligible under the regulations have been advised to take out this insurance, although it is not compulsory.

Any employe of the company in the service on February 28, 1929, who does not choose to subscribe for group insurance will continue to be eligible for death benefits. Those subscribing for group life insurance, however, will be ineligible for free death benefit under any company plan which may be in effect. Employes who entered the service on or after March 1, 1928, who are eligible for group insurance will not be eligible for free death benefit.

OPERATORS DISCUSS COMPARISON OF COSTS RUNNING WEST TEXAS CRUDES

The discussion which followed Doctor Born's paper on the evaluation of West Texas crudes, delivered at the meeting of the manufacturing group in St. Louis during the Western Petrolehm Refiners annual convention, showed there was a wide diversity of ideas regarding the corrosivenes of that crude. This paper is printed in its entirety in this issue of The Oil and Gas Journal on page 34, and in it he discusses the relative costs of refining West Texas and a typical 30 gravity Mid-Continent or Oklahoma crude. Doctor Born was asked if there is a great deal of difference to be allowed in the manufacturing cost when comparing the two crudes due to the faster depreciation of the equipment when running the West Texas crude. He said it was his experience, the corrosive action of the West Texas crude is not pronounced enough to cause an appreciable increase in the refining cost from this factor. This statement brought a fuller discussion of the problem and Doctor Tydeman manufacturing manager of the Shell Refining Co.'s plant at Wood River, Ill., said it has been his experience the tubes in the pipe still and condensers had to be replaced very much oftener when running the West Texas crude and that an appreciable increase in the manufacturing cost was witnessed when running this crude. Other operators experienced the same rapid corrosion of their distilling equipment including the towers and condensers and the question of the differences in their experiences was at first explained as due possibly to the variation in the sulphur content of the crude from the different pools in the West Texas area.

Salts Present in Crude

The presence of magnesium salts also explained the corrosive action of certain crudes. Doctor Faragher of the Universal Oil Products Co. took exception to the thought the difference in the corrosive action was due to the difference in total sulphur content. He said, "The total sulphur content of a crude is not an index of its tendency to corrode the equipment during the ordinary distillation of the oil," and as evidence, cited the fact the high sulphur content heavy Smackover, Arkansas crudes were generally considered less corrosive than the West Texas crudes. Doctor Tydeman said it had been his experience there was much less corrosion apparent when running the Smackover oil than when running the West Texas crude.

The method in which the sulphur is combined in the crude is of principal consideration when tracing its corrosive action and the fact there is such a large percentage of hydrogen sulphide dissolved in the West Texas oil, the presence of moisture in the crude allowed a rapid corrosion to take place in the pipe still up to the point where temperature was above 500 degrees Fahrenheit at which point hydrogen sulphide begins to rapidly break down into its components. Thus it exerts a reducing action when present in the crude. Again, as the vapors are passed thrugh the first series of fractionating towers, where the temperature is below 500 Fahrenheit and in the condensers, there is considerable chance for the hydrogen sulphide to corrode the equipment rapidly. It was stated that a West Texas crude rich in dissolved hydrogen sulphide but showing only .7 per cent sulphur had a much greater corrosive action than a Smackover crude with a total sulphur content of 1.5 per cent.

Cracking Stock Corrosive

The question regarding the corrosive action of the distillates and residual oils made from West Texas crudes on pressure still equipment was then discussed and it was evident there is a variety of experiences being witnessed, due principally to the fact some units run the over head gas oil as a charging stock while others run the bottoms. Doctor Born, in answering a question in this connection, said the gas oil which he had considered as a representative overhead charging stock for pressure stills from West Texas crude had an average sulphur content of .8 per cent while the bottoms or long resid, including the normal yield of gas oil, averaged about 1.5 per cent. These figures were based on running Hendricks county crude.

When asked what experiences were witnessed at the Houston Oil Co. of Texas' Camden, Arkansas, plant when running high sulphur content Smackover crude, W. R. Hounsell said corrosion was minimized by insulating all equipment and vapor lines to practically eliminate condensation of any water up to the entrance to the condensers. At this point ammonia is injected into the lines and neutralization progresses throughout the condenser. The top row of tubes are made of brass to resist the corrosive action before the ammonia has had time to complete its neutralization action.

Higher Treating Costs

From here, attention was turned to the possibility of higher treating costs on gasoline when running West Texas crudes and Doctor Born said this was correct. At the same time, he said the increased treating costs might be more than equalized by the fact the gasoline made from this crude had a very high anti-knock value. Even the straight run gasoline had a very high value. The benzol equivalent of this gasoline, taking the average Mid-Continent gasoline as 12 averaged about 44 according to Doctor Born and when asked what value was shown for Ethyl gasoline on the same scale, Doctor Born said the Ethyl gasoline showed an average of about 40.

L. R. Crawford, of the Producers and Refiners Corporation then introduced the idea that some increase in value may be assigned to gasoline having a higher benzol equivalent than another but until the gasoline will work satisfactorily in all automobiles as an anti-knock fuel and is equal to Ethyl gasoline, this increase in value is small and the question of the value of an antiknock motor fuel ceases to be relative. A gasoline is or it is not an antiknock gasoline based on the standard set up by Ethyl gasoline.

The matter of sulphur content in the West Texas gasoline occasioned a question answered by Doctor Born in which he said the average United States Motor grade from the standpoint of its distillation range had a sulphur content of .22 per cent before the doctor treatment and was reduced to about .15 per cent as a finished product. To reduce it to the .1 per cent required in the United States Motor specifications, it was necessary to treat with acid or treat it in the vapor phase with earth.

In his comparison of costs, Doctor Born was asked if allowance had been made due to the fact the West Texas gasoline required more natural gasoline to bring it up to the ordinary marketable gravities. It was cited that this point is of considerable importance to the Gulf Coast refiners who are running that oil due to the fact they must buy their natural gasoline in the Mid-Continent and pay the transportation costs on it to the Gulf. The delivered cost has been above the price maintained at the coast for the finished gasoline and the cost of using the increased amount of natural gasoline has been high. One Gulf Coast refiner said it was necessary for him to use from 17 to 20 per cent natural gasoline to meet the required 50 per cent point on the gasoline made from the West Texas crude compared with about half that when running the average Oklahoma crude.

Doctor Born was then asked whether the West Texas crude would make a suitable lubricating oil crude. He said his experiences were very limited but because the treating losses would be very high, the value of that oil as a source of lubricating oils would be considerably under the average Mid-Continent crude. He said losses up to 85 per cent of the raw lube stock were witnessed on a small scale when investigating the advisability of using that crude for the manufacture of neutrals and cylinder stock.

Recent Patents

PROCESS PRESSURE STILL GASES

1,705,077. Art of Cracking Hydrocarbons. George H. Taber, Jr., Rye, N. Y., assignor to Sinclair Refining Company, New York, N. Y., a corporation of Maine. Filed Nov. 26, 1927. Serial No. 235,860. 4 Claims. (Cl. 196—8.)

1. An improvement in cracking hydrocarbon oils which comprises subjecting the gas-vapor mixture from the cracking operation to a fractionating operation and then subjecting the remaining gas-vapor mixture to a condensing operation, subjecting the gas-vapor mixture remaining uncondensed from the condensing operation to scrubbing treatment with a higher boiling oil fraction from the fractionating operation, and reintroducing the oil containing constituents absorbed from the gas-vapor mixture in the scrubbing operation into the fractionating operation.

REMOVE OIL FROM BOTTOM RESIDUES

1,705,179. Process for Treating Carbon From Cracking Stills. Gustav Egloff and Harry P. Benner, Independence, Kansas, assignors to Universal Oil Products Company, Chicago, Ill., a Corporation of South Dakota. Filed April 23, 1921, Serial No. 463,938. Renewed Feb. 20, 1928. 2 Claims. (Cl. 196—56.)

1. A process for treating oil soaked carbon produced in an oil cracking operation comprising charging a still with a quantity of such oil soaked carbon, subjecting said carbon to a heat treatment sufficient to distill off all the liquid constituents thereof by applying the heat centrally of said still to cause the heat to radiate through said oil soaked carbon, and continuously agitating such carbon adjacent the walls of said still while undergoing said heat treatment.

CLARIFY WITH SOLUBLE RESINATE

1,703,646. Oil Clarification. Charles Van Brunt, Schenectady, N. Y., assignor to General Electric Co., a corporation of New York. Filed June 23, 1924. Serial No. 721,609. 7 Claims. (Cl. 196—16.)

1. The process of eliminating finely divided solid matter from mineral oil which consists in adding an oil-soluble resinate of a heavy metal to said oil and then treating said oil with an aqueous solution of an alkaline agglomerating agent.

Natural Gasoline Manufacture

Treating Gasoline At Columbian Plant Located at Lefors

By G. G. Quinn
Columbian Gasoline Corp.

The object of this paper is to describe the treating plant we have at Lefors, Tex., and to explain various details attached to this plant. Fortunately, the gasoline in the Lefors area is not corrosive to any great extent and unless a rigid test is run no trace of the corrosive compounds of natural gasoline can be detected.

The one problem we had to solve was to remove the "mercaptane" or sulphur compounds which tend to give the gasoline a bad odor and cause it to be off color and off "doctor." The most up-to-date and reliable process in use today for modern gasoline treating is the hypochlorite process which is practically continuous and requires a minimum of attention.

In the sodium hypochlorite method of treating the hypochlorite attacks the sulphur compounds in natural gasoline and causes them to be precipitated as a flocculent mass.

A location was selected for the treating plant in order that the length of connecting lines were as short as possible and also in such a manner as to treat the gasoline leaving the stabilizer column which prevents the necessity of having the drain on the storage tanks for a supply of gasoline to run through the treating plant.

In this manner only gasoline ready for shipment is kept in storage and eliminates to entrance of foul gasoline into the tanks. The gasoline is treated as fast as stabilized and as the capacity of the treating plant is greater than that of the stabilizer there is little danger of a quantity of gasoline having to go untreated.

Design of Treating Plant

The equipment for the treating plant composes the following:

1. Mixing tank in which the hypochlorite and caustic (if necessary) solutions are mixed.
2. Contacting column through which the gasoline is brought in intimate contact with the treating solution.
3. Settling tank in which the treated gasoline is given a period of detention and the chemicals are allowed to act on the sulphur compounds.
4. Wash tower in which the treated gasoline is brought in contact with water to remove any trace of precipitate or other impurities.
5. Water pump to circulate water through the wash tower.
6. Hypochlorite pump to circulate the hypochlorite solution.

The Mixing Tank—The mixing tank is constructed of ample size to allow a copious mix to be made at one time. It is 6 feet by 8 feet and constructed with a platform around the top and a small crane for lifting hypochlorite drum. A hopper is provided in the tank in order that chunks or clots of chemical compound may be first dissolved there thus eliminating the possibility of having the tank clog up.

From the mixing tank the solution goes to the hypochlorite pumps which pump the liquid to the mixing or contacting column.

Contacting Column—In the contacting column the hypochlorite solution and raw gasoline are brought in intimate contact with each other through a series of orifices.

The column proper is constructed of 8-inch pipe with 20 orifice plates spaced 18 inches apart. Each orifice plate has two 1¼-inch holes in it. The plates are arranged so that the holes in one

(Continued on Page 139)

PRODUCTION STEADY IN SEMINOLE DESPITE CURTAILMENT PROGRAMS

Natural gasoline production in the Greater Seminole area is being maintained with very little change in the total output according to the monthly check of The Oil and Gas Journal. The latest check which was made on March 15 shows that the total production on that date including the St. Louis-Pearson area was 1,054,200 gallons daily. This is a slight increase over the total of 1,044,500 gallons for the middle of February.

If it were not for the general curtailment of crude oil production in Oklahoma including the Sunday shut down practice of a few companies the gasoline production in Greater Seminole at this time would probably average from 100,000 to 150,000 gallons more than present production. Several companies in reporting their production on last Friday stated that their daily output had been reduced from 10 to 20 per cent due to the curtailment and Sunday shut down. In other cases the companies have had surplus gas and despite the smaller gas volume they now have all the gas available that their plants can handle.

The curtailment so far as natural gasoline production is concerned is particularly noticeable in St. Louis-Pearson and the Mission pools. Although the gasoline production in both of these newer areas has increased during the past month it is certain that the increase would have been greater had there been no restrictions on well operations. In order that a comparison may be made between the March and February production the following table gives the totals for February by pools as well as the March 15 report by companies.

Operations By Companies

The Amerada Petroleum Corp. now has its new plant in the Maud pool on a production basis of 20,000 gallons daily. Additional gas will be available in the near future and it is expected that the production will be increased to 30,000 gallons daily by the end of the month.

The Independent Oil and Gas Co. is another company whose natural gasoline production will be increased in the near future. The production of the plant in Little River area has been temporarily reduced due to some changes being made at the plant. This plant will be back on a basis of 30,000 gallons daily before the end of the month. The company also expects to boost the production of the new Mission pool to 15,000 gallons daily.

The Empire Oil and Refining Co. expects to increase the production of its new Maud plant to 15,000 gallons daily next month. The production of the Bowlegs plant of the Sinclair Oil and Gas Co. has been increased during the past month. This is due to the gas being boosted from the Mission pool which adjoins the Bowlegs pool. It is probable that Sinclair production in the St. Louis-Pearson area also will increase.

The production of the Carter Oil Co. the second largest manufacturer has been lowered due to the curtailment in the field. According to those in charge of plant operation the company's production fluctuates widely from day to day due to shut downs on the individual leases from which gas is obtained.

The new plant of the Gypsy Oil Co. in the Mission pool is maintaining an output around 50,000 gallons daily. Additional gas will be available before the end of the month and this will probably increase the production to 60,000 gallons daily.

In the North Maud area the Shell Petroleum Corp. has a new plant operating on a basis of 17,000 gallons daily. This plant is owned jointly by The Texas Company and the Shell Co.

Attention is called to additional company names appearing in this month's report. The Gilmore Producing Co. owned by Forrest E. Gilmore of Tulsa has a small plant in the Little River field. The production of this plant is separated from that of the company known as the Forrest E. Gilmore Co. M. F. Powers of Tulsa is the owner of a plant in the Maud pool. This production is separate from that of the Victor Gasoline Co. of which Mr. Powers is president.

NATURAL GASOLINE PRODUCTION IN GREATER SEMINOLE

	Tot.	Sem.	Bow.	Earls.	L. R.	S. L.-P.	Maud	Miss.
Amerada Petroleum Corp....	38,000	.....	7,000	11,000	.....	.....	20,000	.....
Barnsdall Oil Co.....	23,500	.....	.....	18,500	.....	.....	.....	5,000
Carter Oil Co.....	155,000	102,000	8,000	.....	45,000	.....	.....	.....
Crosbie and Moran.....	26,000	.....	.....	26,000	.....	.....	.....	.....
Cushing Refining & Gas. Co.	38,000	.....	.....	.....	15,000	23,000	.....	.....
Empire Oil & Refining Co...	89,000	25,000	45,000	.....	12,000	.....	7,000	.....
Forrest E. Gilmore Co.....	38,000	.....	4,000	.....	34,000	.....	.....	.....
Gilmore Producing Co.....	2,700	.....	.....	.....	2,700	.....	.....	.....
Gypsy Oil Co.....	122,000	.....	.....	.....	72,000	.....	.....	50,000
Independent Oil & Gas Co.	31,500	5,000	.....	.....	20,000	.....	.....	6,500
Magnolia Petroleum Co.....	20,000	.....	.....	8,000	.....	12,000	.....	.....
Moran and Gillespie.....	24,000	.....	.....	.....	.....	24,000	.....	.....
Pure Oil Co.....	46,000	14,000	16,000	.....	.....	16,000	.....	.....
Powers, M. F.....	13,000	.....	.....	.....	.....	.....	13,000	.....
Shell Petroleum Corp.....	64,500	.....	7,500	.....	.....	40,000	17,000	.....
Sinclair Oil and Gas Co.....	240,000	100,000	70,000	10,000	10,000	50,000	.....	.....
Skelly Oil Co.....	4,000	.....	.....	35,000	.....	.....	5,000	.....
Victor Gasoline Co.....	43,000	7,000	20,000	10,000	6,000	.....	.....	.....
Total	1,054,200	253,000	177,500	118,500	216,700	165,000	62,000	61,500
Production February 15....	1,044,500	271,000	150,000	125,000	252,500	144,000	52,000	50,000

* Includes production of Indian Territory Illuminating Oil Co.
† Includes 42,000 production in Searight pool.

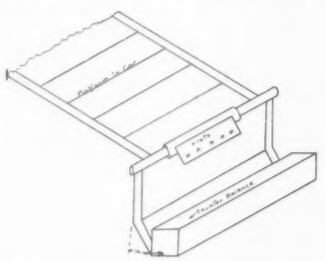
A PRACTICAL SUGGESTION

LOADING RACK PLANK

Probably more minor accidents occur at the loading rack, than any other place in the average natural gasoline plant. How many sales managers have been aggravated by delayed shipments when the real reason was inclement weather and the plant men feared loading especially if loading rack was ice covered or if a strong wind was blowing.

At the ordinary loading rack, access from rack to top of tank car is made by dropping a 2 by 10 -inch or 2 by 12-inch wooden plank. During a stiff wind, traveling this gang plank is like walking a tight wire. A better arrangement for getting over to the car is described here.

The novelty in the device is the very strong hinge made by simply inserting a 1½-inch pipe in a 2-inch pipe and this part the equipment can probably be used to advantage in other applications. A plate with bolt holes is welded to the 2-inch pipe and furnishes a means of attaching rigidly to loading rack platform. A pipe is welded to the 1½-inch pipe on each side of the 2-inch pipe, sufficient in length to extend from rack to standing board of the car. Two-inch wooden planks are attached to these pipe with U-bolts and form the walk-way. To make more safe, side rails may be added. Two more pipes are welded to the 1½-inch pipe and they



in turn welded to a counter-balance, which may be a piece of casing filled with sand.

The weight of the counter-balance may be computed by moments; that is, the weight of counter-balance is equal to one-half the length of plank times its weight divided by the horizontal distance from hinge to center of counter-balance (shown as A in drawing).

Practical suggestions by those connected with the construction and operation of natural gasoline plants are invited. Payment will be made as soon as suggestions are accepted. Address all communications to the Natural Gasoline Department, The Oil and Gas Journal, Tulsa.

CALIFORNIA HAS 50 PER CENT OF GAIN IN OUTPUT

Approximately 50 per cent of the increased production of natural gasoline in United States over a year ago is coming from California according to the January report of the Bureau of Mines. The report shows that the January, 1929, production was 24,300,000 gallons over the same period in 1928.

Of this increase 12,000,000 gallons is accounted for by the gain in California. The California production now is almost equal to the total in Oklahoma which for several years has led the natural gasoline industry as the larger manufacturer.

Oklahoma and Texas output accounts for the greater part of the remaining gain. Oklahoma output in January, 1929, was 4,700,000 gallons greater than in January, 1929, and Texas 5,000,000 gallons greater. Thus California, Texas and Oklahoma have over 90 per cent of the total gain.

Although these three states account for most of the production all the areas in January of this year were making more natural gasoline than in January, 1928. Louisiana had a gain of 900,000 gallons or over 20 per cent.

The following table summarizes the production for the two months (data given in thousands of gallons):

	Production Jan.,'29	Production Jan.,'28	Increase
Appalachian	11,400	10,600	800
Ill., Ky., etc.	1,400	1,300	100
Oklahoma	55,100	50,400	4,700
Kansas	3,100	2,600	500
Texas	31,200	26,200	5,000
Louisiana	5,100	4,200	900
Arkansas	2,700	2,500	200
Rocky Mountain ..	3,300	3,200	100
California	54,000	42,000	12,000
Total U. S.	167,300	143,000	24,300
Daily average ..	5,400	4,610	790

FLEXIBILITY OF CONTROL IS THERE • •
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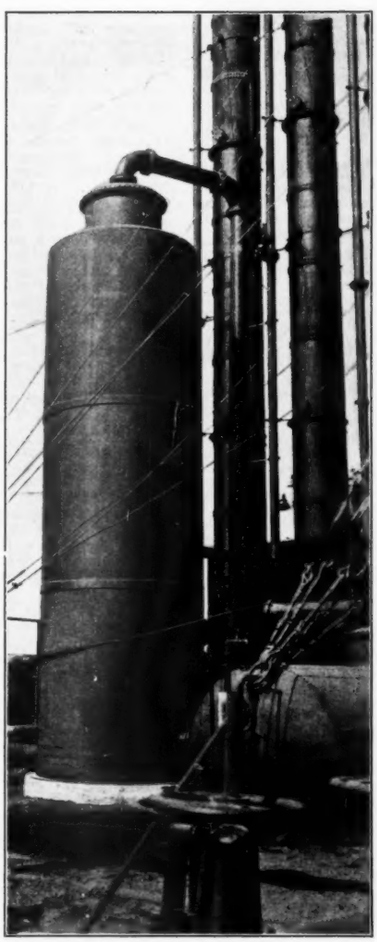

With Ereco absorbers it is possible and within the scope of efficient operation to lower gas capacities to 10 feet per minute shell velocity or raise it to 90 feet. Capacities are based on 90 feet per minute shell velocity at atmospheric pressure.

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BUY OR RENT USED PIPE
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15,000′— 5¾″ Casing.
10,000′— 6⅝″ Casing.
5,000′— 8¼″ Casing.
5,000′—10″ Casing.
1,000′—12½″ Casing.
1,000′—15½″ Casing.
We will rent this casing or any other pipe which you may need. Let us finance your operations by carrying your pipe and casing investment for you.
KEYSTONE PIPE & SUPPLY CO.
Holmes Building
Fort Worth, Texas

USED LINE PIPE AND CASING FOR SALE
250,000′ 2″ Line Used @ 9c.
40,000′ 3″ Line Used @ 18c
50,000′ 4″ Line Used @ 22c
10,000′ 6″ Line Used @ 40c
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Above pipe located in our yard for immediate shipment.
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FOR SALE—Two 14 x 24—150 H. P. Duplex D. A. Cooper Gas Engines direct connected to Hall Compressors, inter and after coolers, all in first-class condition. Priced right. Detailed description and price on application CLARENDON GASOLINE COMPANY, 66 Main Street, Bradford, Penna.

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All sizes in line pipe and casing from 2″ to 15½″ inclusive.
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612-13 Kennedy Building
Tulsa, Okla.

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BOILERS—New 40 hp. non-code oil country type complete mounted or unmounted. Special Price. Star Drilling Machine Company, Chanute, Kans.

HYDRAULIC PUMPS

2—5″×20″ GOULD HORIZONTAL HYDRAULIC PUMPS. Horizontal triplex, double-acting type; outside end packed; Gould's figure No. 1,521; 365 gallons per minute; 12,500 barrels per 24 hours; 1,000 lbs. working pressure; 5″ diameter of plunger; 20″ stroke; herringbone gear and pinion.
Real attractive prices.
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1761 Elston Ave.
Chicago, Ill.

FOR SALE: Steel frame Leidecker Drilling Machine and Tools. Everything good condition. Machine has new Band Wheel, Bull Wheels, and Mast. Price $1,500.00. P. O. Box 3061, Tulsa. Phone 7135.

FOR SALE: 10″ Wilson Underreamer, less lugs. Good condition. Cost over $500. Left with us to sell, by contractor going out of business. Price $125.00. Okla. Pipe and Supply Co., Bartlesville, Okla.

FOR SALE
12 miles of second-hand 8″ line pipe and we are abandoning about 200 wells in Ohio and Indiana and offer for sale 2″ line pipe, 2″ tubing and rods, 5⅝ and 6¼ casing, 8″ 29 pound drive pipe, iron power rods, powers, engines, jacks, etc. For further particulars write, WEST OHIO PIPE COMPANY, P. O. BOX 399, Lima, Ohio.

EQUIPMENT WANTED

WANT DRILLING OUTFIT. Derrick, Rig irons, Sills, without tools. Prefer steel Derrick, but will consider solid wood leg Turnbuckle outfit. For shipment west. Mail list of what you have, location, and best price. Address Box C-824, The Oil and Gas Journal, Tulsa, Okla.

EQUIPMENT WANTED

WANTED TO BUY scrap iron. Will pay highest market prices. Appreciate information regarding location, tonnage. Write or Wire, Garson Iron & Steel Co., First National Bank Bldg., Houston, Tex.

DRILL RIG BARGAIN
Light rotary rig; 45 Hp boiler and engine; about 1,500 ft. 3″ and 4″ drill stem; all in good shape. Half mile from railroad station in Montgomery County, Texas. Will sell at bargain for cash. Address S. S. Russell, 55 DeMenil Bldg., St. Louis, Mo.

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DO YOU WISH TULSA REPRESENTATION? Can handle your Tulsa Correspondence and Business. Have telephone and Post Office Box. Write S. B., Post Office Box 390, Tulsa, Okla.

BUSINESS OPPORTUNITIES

MR. INVESTOR, ask for our FREE folder on an outstanding oil investment for 1929. Trans-American Oil Corp., 407 Perrine Bldg., Oklahoma City, Okla.

CAPITAL SEEKERS—Put your project before 260 livewire brokers—cost trifling. Details free. Amster Leonard, East Orange, N. J.

THIRTY-FIVE thousand dollars wanted for development 2,000 acres; proven for commercial gas and some oil. P. O. Box 385, Houston, Texas.

BOND Issues Prepared, Issued and Handled for Manufacturing, Industrial and building contracting corporations. Financial matters taken care of promptly. What have you to offer? Address: DeLonge Co., Highland Park, Detroit, Mich.

A THOUGHT FOR TODAY—NOW
Do I know the present position of the companies in which I have bought securities, their rating, earning, history, etc.? for this information send $2.00 to
HARRY W. NELSON
Investment Counsel
Dept. B 356
Canton, Ohio.

HAVE 20,000 acre drilling block in Northern Hudspeth County, Texas. 10,000 acre drilling block in Cochran County, Texas. 15,000 acre drilling block in Hockley County, Texas. Plenty of time to start operations. Well located geologically. Want financial aid. Garland A. Tunstill, P. O. Box 907, Ft. Worth, Tex.

I have an entirely new scientific apparatus to locate oil showing exact depth and quantity—100% accuracy—I have contracts pending and drilling equipment but need $5,000 to $10,000 additional capital. Liberal proposition to investors. Address E. J. Goeyens, Drilling Contractor, 1476 Broadway, New York.

NEED CAPITAL?
For $35 we'll prepare a strenuous Sales Letter and furnish Several thousand Prosperous Investors names. Mail order Campaigns and Stock Prospectuses written, any Business. Prosperity Advertising Service, 1819 Broadway, New York City.

WILL SELL new refinery located in West Texas to responsible parties for few thousand dollars down payment. Plant has daily capacity of one thousand barrels and is approximately 75% complete. Gasoline manufactured can practically all be sold at tank wagon prices in vicinity of refinery. This plant when completed will be a big money maker on account of its particular location. J. T. Henderson, Box 2161, Tulsa, Okla.

UNLEASED LAND in Shell Pet. Co. block 320 acre Cotton Co. Red River valley farm. Will give one-fourth royalty and mortgage on land for loan of $7,350 to prevent foreclosure. Box C-842, The Oil and Gas Journal, Tulsa, Okla.

STOCKHOLDERS LISTS
Have 1,600,000 Stockholders in 1,200 companies, oil, mining, and industrial. Ask for Price List showing name, number in list, and price.
A. F. Williams
166 West Adams St.
Chicago, Ill.

BUSINESS OPPORTUNITIES

A live bulk station business in a wealthy farm community, owner's time taken for other interests. Address Box C-832, The Oil and Gas Journal.

POSITIONS WANTED

POSITION WANTED — Superintendent Natural Gas Production Transmission or Distribution. 12 years experience. Age 35. Now Employed. Married. Address Box C-781, The Oil and Gas Journal, Tulsa, Okla.

TRAFFIC MANAGER with long experience with leading Oil Well Supply Manufacturers, at liberty after March 1. Wants to locate in West or South. Willing to start at reasonable salary and let results care for future. Box C-752, The Oil and Gas Journal, Tulsa, Okla.

LAWYER, Four years tax and title experience wants to connect with oil company. References. Box C-822, The Oil and Gas Journal, Tulsa, Okla.

GRADUATE MECHANICAL ENGINEER, married, with three years experience in refinery maintenance and construction, desires position with chance to work into position of responsibility. Would consider sales work. Now employed but good raesons for desiring to change. Address Box C-834, The Oil and Gas Journal, Tulsa, Okla.

Reliable man with all around experience in production, desires position as pumper. Prefer to work in Oklahoma; 42 years old. Can furnish best references. Have had experience as producer. Address Box C-831, The Oil and Gas Journal, Tulsa, Okla.

Competent electrical, telephone, telegraphy designing and estimating engineer three years University and fourteen years practical training. Now employed past three years with large oil company. Desires position with major oil company where there is a future. An interview would be appreciated. Address Box C-833, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED
An executive and part owner of an independent oil company who has been in the oil business several years, and has had very broad experience, both as an executive and in various branches of the oil business, has sold his holdings, and would consider a position with good reputable oil company, if compensation and future possibilities are satisfactory. Capable of taking charge of Land Department, operations, sales department, or any other executive position where ability and efficiency count. Can convince anyone as to ability and qualifications. Prefer position in United States, but might consider foreign service if salary and working conditions justify. Best of references furnished on request. Box C-845, The Oil and Gas Journal, Tulsa, Okla.

YOUNG MAN 34, member of the bar and skilled in accounting and financial procedure. Former U. S. Treasury Department tax official and now practicing tax counsellor desires permanent connection with oil company or allied industry. Salary secondary consideration to a position with opportunities. Box C-851, The Oil and Gas Journal, Tulsa, Okla.

EXPERIENCED Trained man wants permanent connection foreign or domestic. Production or marketing. Educated some Spanish. References. Box C-852, The Oil and Gas Journal, Tulsa, Okla.

FIRST CLASS Blacksmith. Acetylene Welder. Can repair all kinds gasoline engines. Would prefer the West. Box C-840, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

ENGINEER wanted by firm in New York City, widely known in Oil Industry. Must be thoroughly familiar and capable of designing Oil Distillation Plants. Mechanical and Structural experience essential. Write stating Age, Experience and Salary expected. Address Box C-812, The Oil and Gas Journal, Tulsa, Okla.

WANTED Pumping Jack salesmen in deep territory. Give reference. P. O. Box 88, Tulsa, Okla.

HELP WANTED

WANTED—EXPERIENCED and capable instrument man for modern refinery. Group two location. References necessary. Address Box C-813, The Oil and Gas Journal, Tulsa, Okla.

WANTED — Draftsmen, prefer men with oil refinery or similar experience. Give full details of personal history, experience, salary desired, etc. Address P. O. Box 788, Wood River, Illinois.

WANTED—High grade sales representative understanding rotary and cable tools and supplies. Must be willing to go to South America. Give full details as to qualifications, experience and connections in your first letter. Box C-846, The Oil and Gas Journal, 101 Park Ave., New York City.

HELP WANTED—High class Refinery Engineer familiar with Steel Plate Fabrication and with Shop Practice—is needed by Nationally known Equipment Manufacturer. Communicate with Box C-847, The Oil and Gas Journal, Tulsa, Okla., and interview will be arranged at convenient point.

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COLLEGE TRAINED MEN PREFERRED. STATE EXPERIENCE IN DETAIL AND SALARY DESIRED. SUBMIT PHOTO WITH APPLICATION. REAL OPPORTUNITY FOR HIGH CALIBER MEN. LOCATION JERSEY CITY. BOX C-850, THE OIL AND GAS JOURNAL, 101 PARK AVE., NEW YORK CITY.

ADDRESSES WANTED

ANYONE knowing whereabouts of Robert T. Walsh, age 24, weight 165 pounds, height five feet ten, dark curly hair, noticeable scar under left eye, last seen driving Ford Coupe, 1928 license number 169-F-596. Maybe vicinity Fort Worth, please wire, Donnelly, 1193 East 99th St., Cleveland, Ohio.

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CAPITAL SEEKERS
Will endeavor placing proposition of merit on underwriting basis. Box 44, Room 407, 26 Court Street, Brooklyn, N. Y.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 136 E. 13th, Oklahoma City, Okla.

SECURITIES DISTRIBUTOR solicits inquiries from corporations interested in raising capital through marketing of corporate securities. Booklet on request. Brookworth Co., Inc., 110 East 42nd St., New York, N. Y.

LARGE CAPITAL available for loans on producing properties. Reasonable terms. Box C-821, The Oil and Gas Journal, Tulsa, Okla.

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OIL LOCATED before drilling. Geophysical method. Magvibrometer Instrument; take pay in oil. No oil, no pay. Except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Texas.

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35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

We have about 10,000-acre Block Reno County, Kansas. Want drilling proposition for acreage. For quick information, address F. C. Purdy, Sterling, Kans.

LEASES AND ROYALTIES
Close in to production, Sedgwick and Harvey Counties, wire or write. Southwest Investment Co., 205 Orpheum Bldg., Wichita, Kans.

ROYALTIES AND LEASES, BOUGHT AND SOLD.
25 years experience in the Mid-Continent oil fields. E. J. Davied, Fort Stockton, Texas.

BROKERS AND OIL MEN—
I have under lease 5,000 acres in Illinois near good producing oil field, which oil men claim has a feeder. I have located what geologists have been looking for. Sand rock, a ledge six feet thick underlays this location, also other good formations. I am willing to let some good men or company in to help finance this and share results. Would appreciate the advice of any geologist you may have or consult. Will be in Illinois about April 1. This will bear strict investigation. Virgil Cox, Rialto, Calif.

For Sale—Southeastern New Mexico leases. Orcutt-Harris & Co., Oklahoma City, Okla.

WINKLER, PECOS, WARD, Loving and Reeves Counties. Leases and Royalties. Hemby & Anderson, Box 633, Pecos, Texas.

TEXAS
Leases and Royalties,
Drilling Blocks,
Central and Southwest Texas,
Gulf Coast.
In the play now—Bastrop, Caldwell, Guadalupe, Gonzales, Wilson Counties.
J. S. JONES,
Tel. Bldg. Phone 351.
LULING, TEXAS

WINKLER—PECOS COUNTIES
Leases and Royalties
W. S. PATTERSON
Pecos, Texas

FOR SALE
OIL and Gas Leases, blocked, of approximately 800 acres, located in Allen County, Kansas, between the towns of Chanute and Humboldt. 79 producing wells, 25 barrel production; Shackle system of pumping, with six powers. Extra material in yard for about eight wells. Wells average about 850 feet. Artificial pressure or vacuum never operated on the premises. Should make an ideal pressuring proposition. This property if sold within the next sixty days can be bought at a very attractive figure. Address BROKER, 1502 Commonwealth Bldg., Pittsburgh, Pa.

FOR SALE
320 acre lease offsetting gas well $10.00 per acre. Also producing leases in Wyoming. R. Kamon, 2837 Hemphill, Fort Worth, Texas.

AM OFFERING undivided acreage units on Kansas acreage offsetting producing wells at $100.00 per unit. Open for either large or small investor. Address Box C-849, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE
300-acre oil lease located in Cowley Co., Kansas, on good structure close to producing wells. Address Box C-848, The Oil and Gas Journal, Tulsa, Okla.

NO GAMBLE
BUT A SAFE INVESTMENT
THREE EX-SOLDIERS OIL GAS ROYALTY OPERATORS TRUST COMPANY. Your investment is safe-guarded against loss at all times by a guaranty mortgage bond, if you are interested in receiving further information write, Wm. J. Kline, Sec'y., 2973 Riverside Drive, Cincinnati, Ohio, or L. E. Troxel, Field Manager, Gallup, New Mexico.

LEA COUNTY, NEW MEXICO
Perpetual Royalties.
W. S. Patterson
Pecos, Texas

BROKERS: Western Oklahoma leases, drilling blocks, royalties. Joe P. Crawford, Oklahoma City, Okla.

LEASES—PRODUCTION

1 mile west and 2 miles south of drilling wells, one with show of oil at 1,331 ft. 1/32 or 1/64 royalty over all of 17-18-19-21-N½ 16 and N½ 20, P. S. Blk. 81, CULBERSON County. 320 acres up at $1.50 per acre Base. 10 year lease S½ Sec. 8, Blk. 81, 25c rental. Price $1 per acre. C. H. C. Anderson, 709-12 Linz Bldg., Dallas, Tex.

FOR SALE
3,200 Acres Oil, Gas and Mineral leases on Mitchell Creek Anticline, Clay Co., Tenn., adjoining Gas wells and Oil Production.
J. G. Webb
Box 545 Louisville, Ky.

WANT TO BUY small production located in Okmulgee County. Address Raycomo Oil and Gas Co., Orrick, Mo.

Rock Asphalt, 500 acres. 30 to 50 ft. thick. Also Feldspar deposit. Box 653, Kansas City, Mo.

For Sale—Fullers Earth Deposit, superior quality. Accessible and over burden light. J. H. Hodges, Apalachicola, Fla.

740 ACRES Hudspeth Co., Texas, in fee, all mineral rights included, priced right. Geo. F. Simmons, Bellevue, Texas.

971 acres near Erath County big gas field. 5 year lease 50c rental $200 per acre. Box 91, Dublin, Texas.

WILL SELL oil property near Coalinga, Flowing well near. P. O. Box 343, Fresno, Calif.

1,800 acres Colorado Departmental Oil Lease for sale, $3 per acre or drilling contract. Box 226, Austin, Minn.

SCURRY COUNTY lease Block 15,000 acres. Subsurface geology very favorable. In trend of production $2.00 per acre. MITCHELL COUNTY leases near Simms well drilling on Elwood ranch $5.00, up. YOAKUM COUNTY leases in T. P. Block, $3. PECOS COUNTY royalties. Near Pecos valley producers, in trend $10 acre base. GAINES COUNTY royalties SW part $7.50. LAND IN FEE Brewster, Presidio, Culberson and Reeves counties, bonus $1.50 up. J. L. FERGUSON, Box 462, San Angelo, Tex.

BRAZORIA COUNTY, Texas, sacrifice 100 acre improved farm best oil proposition in gulf coast $30.00 acre ⅛ minerals reserved aside from oil possibilities excellent farm land now bringing good revenue.
1105 W. Drew St.
Houston, Texas.

NEW MEXICO LEASES
3,500 acres scattered in Roosevelt County will sell at $1.50 per acre. Box 358, San Angelo, Texas.

ABOUT to drill 3,200-foot well, heart of famous Texas oil field, 1,000 to 5,000-barrel gushers close, geological data indicates my undrilled lease will produce equal to any; acceptable associate or acreage offsetting drilling tract. Write, wire or call for information that will fill all requirements of geologists, practical oil men or investors who will consider only the best.
E. L. STRATTON
2104 Fort Worth National Bank Bldg.
Fort Worth, Texas.

OPPORTUNITY OF A LIFETIME
We have devised a radio instrument to locate oil and gas. With this instrument dry holes are practically eliminated. This is no experiment. It has been proven. We have 23 producing wells. We are operating in the shallow field just 45 miles from Kansas City. We have under lease over 3,000 acres that has been tested and approved by this instrument. All of these leases are close to pipe line. We need more capital to develop these leases. We have a high class proposition to offer you on the groundfloor, to anyone who is able to finance. Investigate this offer. R. P. Roark, Osawatomie, Kansas.

720 ACRE LEASE for drilling contract, on good structure. Directly between Fluhman and Mathews Pool, Wilbarger Co., Texas. T. H. Haney, Box 103, Thalia, Texas.

FOR SALE—Leases, Oil Production, Asphalt, Limestone and Other Mineral Lands. W. P. Harley, Bowling Green, Ky.

LEASES—PRODUCTION

HARVEY COUNTY, KANSAS
Abstracts furnished promptly.
H. A. Brush Newton, Kans.

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LEASE BUYERS AND INVESTORS
We represent hundreds of California owners of New Mexico State Oil Leases in the trend of development and offer some wonderful buys in Lea, Eddy and Chaves Counties. Barnhart-Powers, 1404 Franklin St., Oakland, Calif.

CADDO COUNTY
OIL LEASES AND ROYALTIES
C. W. Ludwick
Fort Cobb, Okla.

OIL LAND FOR LEASE and drilling, located Tr. 1. N. W. ¼ Sec. 30. T. 22. R. 12. E. 160 acres, Osage County, Oklahoma. George Wagner, lease owner, 3715 Melbourne Ave., West, Cleveland, Ohio.

LEA COUNTY, NEW MEXICO
FOR SALE—E½ SW¼, Sec. 31, Twp. 18S, Rge. 37E. Price $125 per acre. NW¼, Sec. 29-14S-33E, Price $3 per acre. E½ NE¼, Sec. 8, Twp. 14S-31E, $3 per acre. Address P. O. Box 422, Pittsburgh, Pa.

For Sale—Well located 80 acres Sedgwick Co., Kansas, in Barnsdall Block, Good Geology. Near drilling well. Also have block 2,500 acres. North McPherson Co. Field, no drilling requirements. G. W. Moore. Independence, Kans.

WILL LEASE 80 acre North or South of Handy Tract. 160 acres Erath County, land adjoining Kelsey Well, $20 per acre. Heron, Gordon, Texas.

30,000 ACRE Lease in Harding Co., New Mex. Will sell or make drilling contract. Have Geologist's report. Plenty of structure in sight. Also for sale or lease. 160 acres Grey Co., Texas. 1½ miles from big wells at LaFores. Address Box C-843, The Oil and Gas Journal, Tulsa, Okla.

LEASES—Royalties and blocks ahead of drilling wells. Western part of State, write me what you want. Address Box C-844, The Oil and Gas Journal, Tulsa, Okla.

SACRIFICE: Circumstances compel sale perpetual royalty of ⅛th and ⅞ ten year commercial lease, 25c annual rental, 2,240 acres Lynn County, Texas, Northwest Hart-McCamey well, in trend, surrounded by major company leases, regarded on torsion balance and siesmograph high. Price $12,000.00 cash, with 5% to brokers. Possibility that lease alone will sell within three or four months at double my price for both. Address fee owner, L. Wesley Read, Lubbock, Texas.

IF YOU wish to take a "Flyer" in the "Oil Game," write Walcott, 405 Continental Bldg., Oklahoma City for proposition. 5,600 acres of land in Oklahoma's largest proven field with more than Eleven Million Dollars in Oil Already produced.

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HATCHETIGBEE
ANTICLINE

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FOR SALE—Choice 80 acre Oil and Gas Lease W½, NW¼, Sec. 32-T17-R32, Lea County, New Mexico. P. O. Box 558, Chanute, Kans.

ROYALTIES—PRODUCTION

YATES POOL ROYALTY
One acre or more on Sections 2, 10, or 19, blk. 194, at $150 per acre. Glen Myers, San Angelo, Texas.

ROYALTIES—PRODUCTION

WESTERN OKLAHOMA royalty ahead of the drill. Inquiries invited. Joe P. Crawford, Petroleum Bldg., Oklahoma City, Okla.

ACTIVE WEST TEXAS ROYALTIES. $8 per square mile big company operation. Also close-in and producing. State preference. Maps and bulletins show many fine buys. R. R. Fisk, Box 1214-B. Wichita Falls, Tex.

PRODUCING ROYALTY
Under big wells South Texas 400 feet of sand no water good title $4,500 will pay out in 6 months or less several more wells to drill. One well 18,000 bbls. you will have to wire to get this. P. O. Box 1463, Ft. Worth, Texas.

OIL royalty 20-40-80, 2 ten-year leases 80 and 100 acres, near location in Oklahoma county. Geo. W. Seckman, Edmond, Okla.

Sedgwick and Harvey County, Kansas, field. Royalties on core drilled structures. Biggest play in Mid-Continent area. Write for list. James Haynes, Grantville, Kans.

PERPETUAL DEEDED ROYALTIES
Winkler, Loving, Ward, Lea, Pecos Counties. J. R. Haynes, Grantville, Kans.

NEW MEXICO LEASES
640 acres, Oil and Gas lease, on deeded lands. Abstract, sell ½ or all for $1.00 per acre, rental paid for 1 year. Located east of Matador. Drilling in Twp. 3 North. 21, East Debaca Co. L. D. Knight, 119 West 6th St., Amarillo, Texas.

J. A. WOLF & COMPANY
127 N. Dearborn, Chicago, Illinois
We deal in Oklahoma Royalties exclusively.

FOR SALE—Quarter Section and part of royalty Okla. County, Okla. G. M. Shaw, 116 S. Draper, Shawnee, Okla.

OIL AND GAS Royalty for Sale. Acreage in NW of 25-12-19 and SE of 36-12-19. Also in Secs. 3-4-5-9-10, and 14 in 11-19. Finklea Bros., Porum or Warner, Okla.

I OWN AND OFFER FOR SALE—Royalties offsetting drilling wells. Good country. Interesting proposition. Prices very reasonable.
Phone 2-8701 TULSA P. O. Box 384.

OIL ROYALTY Opportunity—Wanted few partners $500 join Royalty Purchasing Syndicate active Texas areas. W. T. Earnest, 3321 St. John's Drive, Dallas, Texas.

FOR SALE—One half interest in ROYALTY, two eighty acre tracts within half mile of drilling well, (Colton & Lester No. 1 M. Parker, Sec. 31-12-19, Muskogee County). R. B. Hutchinson, P. O. Box 113, McAlester, Okla.

WE DEED YOU OIL ROYALTY under Major Company leases, located in the big oil play of Lea County, New Mexico. 128th interest $25.00. We buy oil and gas leases. Write for information. Monarch Investment Company, Roswell, New Mexico.

LEASES and royalty, Seminole field, Wichita, Kans., and Oklahoma City field. McLeod, Box 653, Kansas City, Mo.

WANTED

Will the parties who have been to see the McCAULEY family at COLTON, CALIFORNIA, as late as December, 1928, regarding certain Texas Oil Lands communicate with T. C. McKenna, Lawyer, 600 Black Building, Los Angeles, California.

REAL ESTATE

FOR SALE: Sites for filling stations and service shops. Best in Sapulpa, Oklahoma. L. J. Seay, Sapulpa, Okla.

SALE OR LEASE—An all steel building, 70'×200', with one or more acres of land. Electric power, switch and industrial tracks, office, etc. Well located (adjacent to new base ball park), and suitable for any manufacturing business. On a lease basis, will build to meet your requirements. M. R. Ducey, Owner, P. O. Box 223, Houston, Texas.

Additional Classified Wants on Next Page

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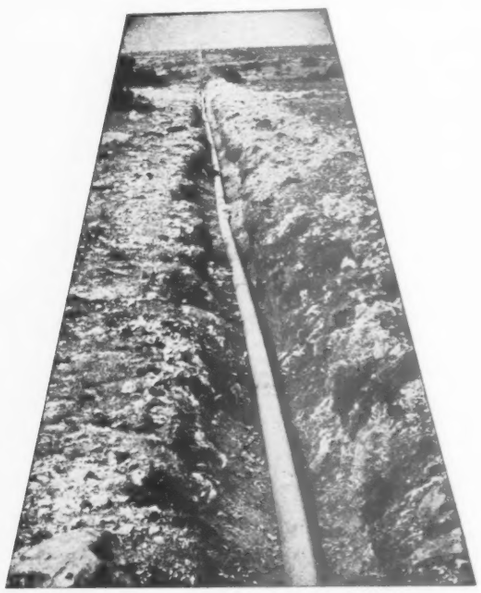
straight across country goes the oil, the life-blood of twentieth-century industry. GREENSPON'S PIPE carries it securely, unfailingly. . . . . To cut installation and maintenance costs, investigate ODEE PIPE—welded at our plant into double lengths that save half the field-welding. Broadly guaranteed.



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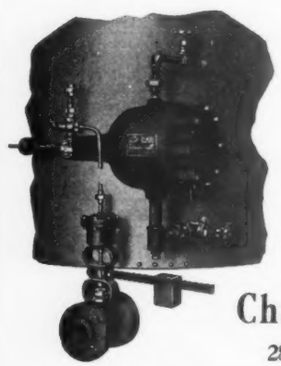

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CALIFORNIA FIELDS

(Continued from Page 129)

three months eight wells have been put on production with the result that field production has been showing a small but consistent increase from week to week. The Marland started the ball rolling by recompleting Nos. 15 and 20 on the Selover lease flowing 650 bbls and 1,420 bbls., respectively. The former was redrilled and deepened from 5,575 feet to 6,875 feet while the latter was bottomed at 5,420 feet. The Standard has recompleted Nos. 1, 2, 4, 8 and 11 on the San Gabriel property, all of them showing favorable production. No. 1, which was originally completed in March, 1927, flowing 1,570 bbls. daily from 4,727 feet, was returned to production recently flowing 975 bbls. daily from 5,103 feet. No. 2 San Gabriel, originally finished in December, 1926, doing 1,520 bbls. per day from 4,482 feet, has been recompleted flowing 1,250 bbls. of clean 27.5 gravity oil from 4,957 feet. No. 4, which was recently recompleted doing 1,760 bbls. of clean 27.6 gravity oil daily from 5,032 feet, has been holding up very consistently since completion. No. 8 San Gabriel, which was originally finished doing 1,945 bbls. daily from 4,710 feet in March, 1927, and subsequently recompleted doing 875 bbls. daily from 4,865 feet in November, 1927, has just been recompleted for the second time and this rejuvenated well is flowing 2,280 bbls. of clean 27.4 gravity oil daily from 5,492 feet.

No. 11 San Gabriel, another well which has two deepening jobs to its credit, was recompleted a few days ago flowing 1,490 bbls. of clean 26.9 gravity oil daily from 5,071 feet. This well was first completed in July, 1927, flowing 838 bbls. from 4,683 feet but was deepened the following month to 4,734 feet and returned to production flowing 1,640 bbls. per day. The Associated, which has been engaged in a conservative development campaign in this field, has just recompleted No. 10 Hellman after redrilling and deepening it from 4,784 feet to 5,518 feet, from which depth it was returned to production flowing 2,490 bbls. of unusually clean 28.4 gravity oil daily. This is the best well finished in the Seal Beach Field for a long time. It will be followed into production by others, however, as the Associated, Marland and Standard all have one or more projects in the oil sand at the present time.

Ventura Avenue

The Pacific Western Oil Co., which acquired the properties and holdings of the Petroleum Securities Co. several months ago, finished two new wells in the Ventura Avenue Field during the past week but one of them, No. 4 Willett, was a distinct disappointment as it only showed an initial of 100 bbls. daily from 7,208 feet. No. 12 Orton, however, was a satisfactory completion as it came in flowing at the rate of 1,250 bbls. daily from 6,842 feet, the hole having been plugged back from 6,950 feet. Completions in the Ventura Avenue Field during the past several months have not been showing as large an initial daily production as heretofore due possibly to severe curtailment required to reduce the high gas-oil ratio necessary to eliminate the enormous wastage of natural gas which has attended the development of this prolific district. The scope of development work was enlarged several months ago and while the area being drilled has been expanded there has been no substantial increase in the number of strings of tools in operation. A check of development work under way at the present time indicates the probable completion of some 5 or 10 wells within the next 30 days, as the Associated, M. K. T. Oil Co., Pacific Western and Shell all have one or more projects in the pay at the present time. The field, however, is producing under wraps and could easily be stepped up to 10,000 bbls. per day if necessary.

Kern River

In the completion of its No. 30, out along the Kern River front in Section 22-28-28, for gauged production of 250 bbls. of 16-degree gravity oil daily from a depth of 2,290 feet, the Richfield Oil Co. scored success in the first well drilled on this lease since it was taken over by the company late last year. So confident is Richfield of its ability to build up considerable reserve production in this area that elaborate preparations are being made to engage in extensive development if conditions warrant. No. 5 is already down 2,070 feet, No. 10 at 1,1[illegible] feet and rigs going up for Nos. 20 and 25. Richfield's No. 1 Boston, a wildcat being drilled in search of Vedder sand production, located on the edge of the old Kern River Field where oil from a depth of from 900 feet to 1,500 feet is obtained, is being watched with particular attention by geologists of all companies as this well is believed to be the first ever located entirely as the result of aerial photography and subsequent geological study from the pictures alone. These pictures indicated that the Vedder zone from which production is obtained at Round Mountain evidently exists in this area and this possibility is largely the basis on which the test is being made. No. 1 Boston, which is now drilling above at 1,479 feet, is correlating closely with other wells in the district and completion is expected some time during the early part of April. W. E. "Steve" Dunlap, head of the production department of Richfield, who located the well, feels very confident of production and anticipates that in the event the well is a success commercially that its method of location will be followed widely, at least in so far as semiproven areas are concerned.

NEW MOTOR FUEL IN ITALY

The Italian press reports successful tests of a new motor fuel prepared in Verona and said to be adaptable to automobiles. It is reported to consist of 65 per cent alcohol derived from low grade potato and other plants and 35 per cent of a petroleum product obtainable from the Italian subsoil.

Classified Wants

(Continued from Preceding Page)

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PATENTS

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REGISTERED PATENT ATTORNEYS United States and Canada Before disclosing your invention to anyone, send for blank form. Evidence of Conception Bulletin "How to Establish Your Rights" and complete information free. LANCASTER & ALLWINE 240 Ouray Bldg., Washington, D. C.

INCORPORATIONS

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CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

View Market Outlook With Optimism

Eastern Trade Cheered by Conservation Program and Prospect That Wasteful Overproduction of Crude Will End Soon

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Mar. 18—Lower prices for tank car gasoline and paraffin wax, with a general firming up in the position of lubricating oils, developed in the East Coast refined products situation this week. Trade interests are inclined to view the market outlook for the coming summer months with considerably more optimism, however, owing to the recent constructive developments in the conservation program, and the general belief that much of the wasteful overproduction of crude will be eliminated by mid-year or sooner.

Refiners in the East Coast territory have been watching their production totals rather closely during the past few months, and have been endeavoring to limit their output of unseasonable refined products as much as possible. While there has been some accumulation of surplus holdings, notwithstanding the curtailment, the gain in refiners' stocks has not been of undue proportions, and the market position of refiners in this area as the spring situation gets under way is at least as favorable as for several years past, and in many instances far ahead of that prevailing in recent years.

Weather conditions, on the whole, have been fair for motoring this week, and refiners have reported an appreciable increase in gasoline demand, both in tank car and tank wagon markets. Continued sharp competition in the tank car market, however, has brought the market down another peg, and it is now held at a flat 9-cent basis at Bayonne refinery terminals, and other shipping points in East Coast area.

Bottom Believed Reached

The market at this level appears to show more steadiness than for the past two or three months, and the belief is expressed in many quarters that 9 cents will about represent bottom for the current move, and that a gradual upswing in spot prices may be looked for as consumption picks up with the advent of milder weather.

Export demand, however, will have much to do with the course of gasoline prices over the next several weeks. Indications of reviving foreign demand for American motor gasoline this week are taken as arguments for the constructive side of the market, but the pick-up in export buying has not yet been sufficient to take up the slack caused by the almost total lack of foreign demand for the previous six or seven weeks.

Interest is centering in the operations of the petroleum export corporation. Thus far, this co-operative group has been unable to maintain its price schedule on export motor fuel, although normally the companies thus far comprising the export corporation dominate the export situation pretty thoroughly. It is felt in some quarters that the export group will sit back and let the smaller operators clear out their distressed holdings, although the original program called for the inclusion of all elements of the trade within the export body.

Tank Car Gasoline

Following a week of more or less general price shading, leading refiners have reduced the tank car market for United States Motor gasoline a quarter cent to 9 cents per gallon. In some cases this decline has been made retroactive to March 11, although sellers in a few instances are still holding at 9¼ cents. Standard of New Jersey, normally credited with "making the market," is quoting at the lower figure, however. As a result of the latest reduction in tank car quotations, more jobbers are operating in the spot market, withdrawals under some marginal contracts no longer being as attractive as they were when the tank car basis was a half to three quarters cent higher. Some jobbers, however, with contracts allowing them an unusually wide spread, are still calling for shipments on their contracts, and are holding off of the spot market.

With several days of clear balmy weather during the past week, the movement of motor gasoline accelerated. Distributors who had been down to a car-a-week basis suddenly began forwarding "rush" shipping instructions, and tank car terminals presented a busier sight than for several weeks previously. While the weather is by no means settled as yet, refiners and marketers are of the opinion that the worst of the winter season is behind them, and that from now on moderate, but consistent, improvement in gasoline buying may be expected.

Tank Wagon Gasoline

Improved demand and fairly steady markets are reported throughout the East Coast territory this week. Station sales have picked up materially, and tank wagon departments are busy in keeping deliveries abreast of the broader demand.

Marketers are interested in a survey by the American Automobile Association on the gasoline situation. According to announcement from the Washington headquarters of that organization, gasoline prices varying from 10 to 29 cents a gallon in different parts of the country, with gasoline taxes ranging from 6 cents in South Carolina to 2 cents in Wisconsin, will confront motorists opening the spring touring season. Only two States, Illinois and New York are listed as having no gasoline tax, and the latter is expected to have such a tax shortly.

It is estimated by the American Automobile Association that motorists will use more than 14,000,000,000 gallons of gasoline this year and pay a tax of more than $300,000,000 thereon. There are 22,000,000 pleasure cars in the United States, and 11,000,000 of them will be used for touring or trips during the open season, the A. A. A. estimates. The average day's run for a motorist is 234 miles, compared with about 100 miles 10 years ago.

A large part of the current tank wagon business is on colored gasoline, not necessarily at a premium price, and marketers expect that the trend away from "white" gasoline will become more pronounced as the season progresses.

Kerosene

With a seasonal reaction in consumption setting in, the market has lost much of its firmness. The leading seller continues to quote water white for prompt shipment at 8½ cents a gallon, but other refiners are freely offering this grade at 8¼ cents, with a possibility that some water white could be booked down to 8⅛ cents.

Much of the recent buying of kerosene in this area has been for heating purposes. The general improvement in weather conditions has largely curtailed this demand, and the market is showing signs of getting into narrower ways. The tank wagon quotation remains held at 15 cents per gallon, with activity subsiding somewhat in the metropolitan area, although reports from up-state and New England markets indicate that a substantial volume of business is still being done.

Fuel Oil

Bunker "C" has continued to move out in good volume this week, with refiners quoting $1.05 per barrel, bulk, f. o. b. refinery terminals. Buying in the open market is reported as fair, but the bulk of the movement consists of deliveries against term contracts. There has been a little gain in contract withdrawals, owing to the fact that a number of liners are being temporarily withdrawn from their regular runs, and put into the cruise trade. Thus, some lines are doing more bunkering at this port than is normally the case.

Furnace oil consumption is holding up well. The end of the season is about at hand, however, and marketers report that many consumers are now getting their "last fills" for the season. Prices are well maintained, and the market is rather closely sold up on the more wanted grades.

Diesel Oil

Contract withdrawls account for most of the business this week, and the market remains unchanged at $2 per barrel, bulk, at refineries. Some price shading is still being done by the smaller interests, but this cutting is not general enough to adversely affect the market position.

Open-market trading has shown a little gain during the week, and refiners expect further improvement as the season progresses.

Gas Oil

With consumption by the gas companies decreasing slightly the market for gas oil has been less active. The leading interest is still quoting the market at 5½ cents a gallon, bulk, at refinery, but this price can be beaten by a quarter to a half cent per gallon in the open market.

Refiners are not pressing their gas oil on the market, and show an inclination to hold surplus stocks, particularly straightrun oil, for possible later requirements of their cracking batteries. Supplies of gas oil on hand at East Coast refinery terminals are characterized as "comfortable" but are by no means excessive.

Pariffin Wax

Some selling pressure has made its appearance in the market this week, and spot values are off all along the line. Domestic consumers have come into the market for supplies in moderate volume, but have been shopping the market thoroughly before placing firm business. Finding refiners willing to "meet competition," buyers have been displaying an unusual degree of conservatism in placing orders.

Normally, the market does not get under an eighth cent when it comes to splitting fractions, but this week some trades have been decided by a variation of a twentieth of a cent, as sellers who had put out offerings of one grade at 6¾ cents per pound found out when a competitor booked the business at 6.70 cents. Scale is showing considerable variance in prices, with the market ranging all the way from 3½ to 3¾ cents for 122-124 a. m. p.

On fully refined grades, prices are as follows: 120-122 a. m. p., off ⅜ at 4⅞ cents per pound; 125-127 a. m. p. down ⅜ at 5⅛ cents a pound; 130-132 a. m. p. unchanged at 6¼ cents per pound; 133-135 a. m. p. off ¼ at 6¾ cents per pound; and 135-137 a. m. p. unchanged at 7½ cents per pound. Paper manufacturers have come into the market for supplies in moderate volume this week, and a little inquiry from the shoe polish trade is also noted. The latter industry is not a heavy consumer of paraffin but buys a few cars in the spring months for use in manufacturing summer polishes and dressings.

While stocks at refineries are by no means topheavy, the recent dearth of actual business has prompted some refiners to revise their prices downward, and this has forced a general realignment of prompt shipment quotations all along the line. Some interests are inclined to look for an early recovery in prices on fully refined, although it appears currently that majority sentiment is inclined to remain on the short side of the market.

Lubs

Pennsylvania cylinder stocks have staged a recovery this week. A market increase in the volume of inquiries is reported, and while the increase in actual business is by no means keeping pace with the gain in inquiries, a satisfactory volume is being booked nevertheless. Refiners are showing firmer price views on the general line, and quotations are higher throughout the market.

Offerings of 600 steam refined are rather limited at the moment, and the market has advanced 1 cent a gallon to 31 cents, with 635 up 2 cents at 34 cents a gallon and 650, which is also reported in short supply, showing a gain of 2 cents to 38 cents per gallon. On 600 Pensylvania flash, sellers are 1 cent up at 39 cents per gallon, with 630 flash showing the same advance to 44 cents per gallon. Oil City E, 600, is ½ cent higher at 33½ cents a gallon, with Warren E showing a corresponding gain to 34½ cents.

Demand for bright stocks has picked up materially, with light 140-150 quoted 1½ cent higher at 48 cents a gallon and dark 2 cents higher at 47 cents per gallon. Stocks of cylinder stocks held by East Coast refiners are by no means large, and while quiet in the market during the past month or so has permitted refiners to add to their surplus holdings, the statistical position of the market is still sound.

The prolonged action of compounders and jobbers in remaining out of the market, it is believed, places the refiners at an advantage. Buyers, it is pointed out, will soon be in urgent need of stocks for their spring selling season.

Weather conditions, which have been more favorable this week, have stimulated demand for motor lubs considerably, and have given some indication as to what is in sight during the spring season. Having succeeded in maintaining their market fairly well over the dull period, refiners believe, they are justified in looking for better returns on their lub oil sales when business picks up, and it appears that the market has now reached the turn.

Continued quiet is reported in red and pale oils this week, although the market is fairly well maintained. Refiners report some increase in the tankcar movement from refineries for the week, and look for further gains as the season progresses.

Petrolatum

Snow white has sold in fair volume this week, and the market continues held at 8¼ cents per pound in carlots, local terminals. Inquiry for lily white, however, continues slack, with sellers quoting 7½ cents on this grade. Amber grades are still rather soft in prices, although no changes in quotations have been made this week. Consuming manufacturers in the domestic trade are apparently well supplied with both the pharmeceutical and commercial grades, and current movement is confined principally to shipments against resting contracts. Export movements also of rather restricted proportions, with comparatively little new business in the market.

Export Markets

Interest is centering in the ability of

(Continued on Page 139)

Consumption Growing in Chicago

Buying About Fair for Season but Gasoline Being Used Is Encouraging. Refiners Are Holding Spot Price

By J. B. Waldo

CHICAGO, Mar. 18.—The season continued fine for the time of year and early reports from local and near-by dealers showed that the consumption over the week end was large. Buying by jobbers in this market on Monday was just about fair for the season, but sellers felt that the business must come a little later as the gasoline was being used. The major refiners continued to hold their spot price at 7 cents for U. S. Motor grade. Some gasoline was to be had by jobbers at 6⅝ to 6¾ cents. Some of this cheaper material was offered by marketers who had bought over the month, but some of the offers were made direct by refiners. One large marketer reported the purchase of 100 cars over the remainder of the month at 6⅝ cents for resale from an Oklahoma refinery, the gasoline being full U. S. Motor.

Kerosene was very strong in tone, some refiners still quoting 6 cents and selling only limited quantities while others are asking 6¼ cents. A much stronger market is predicted for April by sellers here. Distillates were quiet as were all furnace oils, the weather being too warm over much of the territory for a large consumption. Some jobbers are carrying a little distillate to supply a new tractor which uses that oil for fuel. Zero gas oils were easier, sellers reporting that cars in transit are hard to dispose of today. U.G.I. gas oil, which may include the recycled as well as straightrun, was in little request early in the week, gas companies beginning to reduce stocks.

There was considerable inquiry from industrial users of fuel oil for prices over April indicating more than usual interest as it is early for April bidding. Zero oils still have a little advantage but no real price premium over usual temperatures. There was some feeling of uncertainty as to prices to be quoted but little changes in actual prices for immediate or over April delivery today.

Buying Out of Line With Consumption

Judging by conditions in this market last week, good distribution does not always mean good buying by the jobbers. We certainly had good consumption of gasoline. Business has been greatly increased by two weeks of fine weather. To the north and west of Chicago, the conditions are not as good and there is still a great deal of ice and snow to be melted. Over much of Michigan and Wisconsin the roads are covered with frozen snow to a depth of 12 inches or more and it is going slowly.

Many jobbers took advantage of the low prices offered for gasoline earlier in the month and have filled or partly filled their storage. One salesman stated that in his territory along the railroad between this city and the Twin Cities all his customers with one exception had bought gasoline for storage, some for a few weeks and others for months. This accounts in part for the lack of buying activity in the spot gasoline market last week.

Takings on contracts were also larger which had its effect on the spot business. Apparently it has worked around so that the jobbers are carrying the stocks which the smaller refiners could not carry in their own storage while the larger refiners are still holding the surplus or a part of the surplus accumulated during the first two months of the year when the consumption was so light that the jobbers could not take in their customary quantity of gasoline.

The smaller refiners being forced to move their product did so at prices that were sufficiently attractive to make it worth the while of the substantial jobbers to fill their storage. Some of the sales were made to marketers who in their turn are now placing the gasoline with their trade as fast as they can secure shipping instructions.

The price situation showed little change last week. The general expression was that the tone was not as strong as during the preceding week, a fact largely due to the decreased spot business. There was no real wavering in the prices named by refiners. The majors were holding steadily to 7 cents and the Standard Oil Co. put its price for U. S. Motor gasoline in tank cars at 7¼ cents. The price range for this gravity out of Oklahoma was 6⅞ to 7 cents and out of Texas from 6⅝ to 7 cents according to origin and other factors.

Some refiners in West Texas who had been out of the market for prompt shipments were again offering material but their ideas as to prices were firm. The same is true of the central zone refiners. They have gasoline for shipment but their idea as to price is 7 cents. Apparently there is no present large stock at any plant. There is always a marked tendency in the industry to anticipate the seasons. Every distributor knows that the actual average increase in the consumption is gradual until June at the earliest, and many years even June is not a very good month, nevertheless jobbers and refiners express disappointment because a dull winter is not succeeded by a full fledged August demand.

Motor Vehicle Demand Growing

Final figures as to the number of motor vehicles registered at the close of 1928 have not been announced but preliminary estimates show that there are many more cars owned than a year ago. The number of buses is growing rapidly, there are many more trucks in use and the airplane is becoming a really important consumer of gasoline. The same condition as to motive vehicles is true abroad although not to the same extent which means a larger foreign consumption of gasoline.

Contributing to the increase in gasoline consumption by automotive vehicles is the added mileage of good roads. The outlook with even a fair season as to weather conditions is for a continued expansion of consumption of gasoline.

The demand is still almost wholly for the U. S. Motor grade and for the antiknock motor fuels. The higher gravities are bought by some jobbers, and some refiners are now running as their chief product the 60-62 437 endpoint gasoline. There is so little demand for the products with a gravity less than 58-60 that prices are mere guess work so far as this market is concerned.

On the other hand the higher gravities have been replaced by the special antiknock products. Aside from the argument as to their efficiency, the refiner and the distributor alike find in these products something distinctive on which they can build with less competition. Few motorists recognize any difference.

Kerosene Strong

Kerosene was strong all of last week. There was considerable buying by some of the larger companies and the supply was limited. In the days when the straightrun process was the chief refining method, kerosene was a necessary cut, but today with the modern methods the refiner can run more or less kerosene or none at all for that matter, so that kerosene is really a controllable product and may be refined only when the prices at which it can be sold are profitable.

The jobber demand in this market was not active last week. Some sellers who had cars that they wanted to move did not find it so easy to secure a buyer. The tractor demand is for only a short period and somewhat uncertain, but the country jobber has to be provided with a supply for his customers. Most jobbers have a supply and several report that the demand has not begun.

Some kerosene was consumed last winter and is still being used by oil burners of the older type which require a distillate with a very low flash for their assured successful operation. The general price in this market last week for the 41-43 gravity was 6 cents and by the end of the week practically none was available for less. One large refinery buying for its own stations paid an average of 5⅞ cents it is known in the trade here. Two other large refiners with distribution are buying, but they have none to sell as they state that they find it difficult to secure what they need themselves. It looks like a strong and a higher market from now until the middle of May at least.

Fair Demand for Furnace Oils

There was some demand for domestic furnace oils and although the market was a little easier prices were still averaging pretty good from the refinery standpoint. So far there have been few cars offered here by distributors as is sometimes the case when they have a spell of warm weather. The few that were offered were usually available for Chicago district unloading only. Prices have reacted to about the level that prevailed before the cold weather demand combined with a shortage of material forced advances.

Good distillate is selling one-quarter of a cent lower in price. Several refiners have reduced their price to distributors that amount. The latter are holding what oil they have coming to them for they realize that while the first half of March was springlike there is a possibility that more oil will be needed during the second half.

For the zero gas oils and high gravity fuel oils the demand continues fair. Prices are a little easier in tone due largely to the re-entry into the market of some refiners who had been so oversold that they could not accept any more business for the time being. Some of these have shaded their previous prices an eighth of a cent, but there is no excess of stocks available and consumption still continues at a fair rate.

The straightrun product is firmly held, supplies being rather scarce and many refiners holding what they have for later use as cracking material. Gas companies have used more gas oil than last season and some of the straightrun product has gone to increase the quantity of zero oil. It was reported here that The Texas Company had been a large buyer of gas oil and of high gravity fuel oils and had practically cleaned out the supplies of a number of refiners.

Industrial Fuel Oils Strong

Industrial fuel oils are moving steadily at a high rate to the steel and allied industries. The great steel plants in this and neighboring districts report that their sales have greatly exceeded their deliveries and they have as a consequence a large amount of unfilled orders on their books which will require them to run to capacity for several months.

At least two of the big packing concerns are making contracts. Wilson & Co. has closed a contract for three years for the supply of fuel oil to its Nebraska City plant. The quantity required is between 6 and 15 cars weekly of an oil having a gravity between 14 and 18 degrees with less than 2 per cent of B.s. and water. These were the only specifications. The contract was secured by a St. Louis marketer.

Another packer contract is that of the Cudahy Co., which is in the market for a six months' supply. Generally the bulk of the business is for small quantities. Prices on the zero high gravity oils are steady.

Resellers and occasionally a refiner paid $1.15 for the 28-30 gravity oil for resale. The 30-32 zero oil was not obtainable in large quantity. Refiners who have a reputation for turning out a high grade product in the higher cold test oils have found it possible to keep well sold up. In fact for any gravity beginning with 24-26 and ranging upward the market is firmly held. On the lower gravities the price situation is less certain. There are considerable amounts of heavy oil some of it offered by West Texas plants and some refined from West Texas crude that is being offered for sale some of it with pressure behind the selling.

Many of the buyers of these heavier industrial fuel oils are holding back their full orders for the coming of the time of the year when there is less demand from the users of oil for heating but the industrial situation indicates a possibility of a larger consumption than a year ago.

Lubricating Oils Unchanged

Lubricating oils are practically unchanged. Bright stocks and steam refined stocks are perhaps a little stronger to buy in this market and neutrals are unchanged. The movement on motor oils and industrial specials is good according to several leading compounders. The season looks good to the lubricating oil man although there is a great deal of conversation regarding excessive competition. There is no sign of any decrease in the strife for business. A large refiner in the Chicago district is beginning on the construction of a complete lubricating plant and facilities here are being generally extended. One large compounder in this city has added to his package business a tank car department and is seeking the business of oil jobbers through several salesmen.

There has been no general change in the tank wagon price scale over the territory and few local changes have been reported. The buying of established independent oil companies is going on and one of the major integrated companies it was stated by an executive has negotiated for the purchase of 38 such oil companies. Some of these have been announced while others are awaiting the completion of details.

Wide Distribution Contemplated

The organization has refineries on the Atlantic Coast, on the Gulf and the Great Lakes as well as in the Mid-Continent Field. While nothing official has been announced as to its expansion program it is known to contemplate a complete distribution from the Rocky Mountains to the Atlantic and Gulf Coasts.

The building of the new Empire refinery at East Chicago now assured undoubtedly means an increase in the number of outlets of its fellow subsidiary the Cities Service Co. The prices offered for successful oil business by these expanding companies are said to be attractive especially to oil men who desire to retire from active business life. Several jobbers have stated that one of their chief reasons for selling was the desire to be rid of the constant strain.

There is little real comparison between the jobber operating a string of oil stations and the wholesale grocer operating a string of grocery stores. That there is still an opportunity for the jobber with well located stations is shown by the success made by oil companies both large and small. Many of the oil companies that are selling out are frightened by

threats that have no real meaning. They lose sight of the advantage which the compactness and the adaptability to local and changing conditions and the light overhead expenses give to the smaller organization.

TREATING GASOLINE AT COLUMBIAN PLANT

(Continued from Page 132)

plate are at right angle to the hole in the succeeding plate. In this way a twisting motion is given to the liquid and the high velocity through the small holes tends to cause a churning effect that has proven very effective. When the mixture of gasoline and treating solution leaves the contacting column it has the appearance of milk.

Immediately after mixing the solution of gasoline and hypochlorite is taken by the shortest route to the settling tank which is a long horizontal tank of generous dimensions which allows the liquid to be given a period of detention in which the flocculent material formed by the action of the hypochlorite solution is given time to settle out: The velocity of liquid through this tank is very low and care is taken in the design of the tank that the liquid on entrance causes no turbulence. This is effected by making the tank with a conical shaped head through which the solution is admitted. A baffle is provided to further break any condition that might cause turbulence in the liquid gasoline for the wash tank and the hypocholrite is removed from the bottom of the tank and pumped over again until the solution is spent in which case the old solution is turned into the sewer and a new solution is pumped in at the same time so the operation is continuous and no shut down is necessary for the changing solution.

Wash Tank—From the horizontal settling tank the gasoline is conducted to a vertical wash tank 5 feet by 20 feet in which a level of water is carried about half way up the tank. The gasoline is admitted at the bottom of the tank and then bubbles up through the water which removes any trace of hypochlorite solution that might remain. From the top of the tank pure treated gasoline ready for shipment is taken. Water is admitted about half way up the column and a level carried there at all times. A quantity of water is also slowly drained off from the bottom of the tank so there is always a supply of fresh water in the tank at all times.

VIEW EASTERN MARKET WITH MORE OPTIMISM

(Continued from Page 137)

the export association to hold gasoline and kerosene markets at the levels established in January and credited to that body. Thus far, the association schedule has been beaten in three cargo sales at the gulf, and offerings are reported this week at North Atlantic ports under the association basis. Apparently, the recent dullness in export buying has permitted the accumulation of so much surplus material that the market has gotten temporarily out of the hand of the leading factors.

Following the sale of two cargoes of gasoline for shipment to France at five-eighths cent per gallon under the export corporation price at the Gulf, there has been some pick-up in inquiry from foreign buyers. North Atlantic sellers have lowered their prices on gasoline in an effort to attract some of this buying interest. Current prices on gasoline and naphtha at North Atlantic follow:

	Current	Change
Navy, bulk	9	–½
60-62 naptha	10¼	–½
64-66 naptha	10½	–½
66-68, aviation grade	13	–½

No changes are reported in the Gulf basis, although the association figure on 61-63, as previously mentioned, has been shaded by five-eighths cent per gallon on cargo sales.

Leading sellers of cased gasoline continue with their quotations withdrawn, and are quoting only on direct inquiry from buyers.

There has been little change in the export kerosene situation during the week. Prices on bulk stocks held unchanged both here and at the Gulf, at Association levels, with routine buying reported. Prices on cased kerosene are also withdrawn on the part of leading sellers.

Export inquiry for bunker "C" oil is quiet here, but a steady market is reported at the Gulf, where sales are reported to have gone through at the recently-advanced price of 75 cents per barrel.

More demand for lubricating oils for shipment abroad has resulted in a general upward movement in prices. Europe is reported in the market for stocks in a fairly large way, while buyers in South America and South Africa are also reported showing more interest in cylinder oils.

Paraffin wax has received little support from export buyers this week, and the market is again lower. Petrolatum sales for shipment abroad have also been along routine lines.

Petroleum Exports

The following table shows principal exports of petroleum and refined petroleum products from New York during the past three weeks (all figures in gallons unless otherwise noted):

	Week ended March 8	March 2	Feb. 23
Gasoline	103,800	435,000	713,650
Naptha	267,000	840,000	3,534,500
Kerosene	102,600	215,000	2,321,900
Fuel oil	8,700	84,800	20,000
Lubricating oil	3,140,600	1,500,700	2,120,200
Petroleum, ref'd	756,500	783,000	1,680,100
Pounds			
Petrolatum			
Paraff'n wax	2,927,000	2,914,800	2,561,800
Refined			
Scale	756,000	122,300	1,964,200
Lubricat'g gr'se.	760,800	1,405,000	1,556,400

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended March 9 totaled 1,924,000 barrels, a daily average of 274,857 barrels, compared with 1,789,000 barrels, a daily average of 255,571 barrels for the week ended March 2 and a daily average of 237,393 barrels for the four weeks ended March 9. Details follow:

	Bbls. of 42 Gls.
At Atlantic Coast Ports—	
Baltimore	244,000
Boston	212,000
New York	877,000
Philadelphia	294,000
Others	143,000
Total	1,770,000
Daily average	252,857
At Gulf Coast Ports—	
New Orleans and Baton Rouge	154,000
Daily average	22,000
At all United States Ports—	
Total	1,924,000
Daily average	274,857
Daily average four weeks	237,393

Included in the week's receipts of crude oil at New York were the following shipments:

To Standard Oil Co. of New Jersey, 119,000 barrels on the Montrolite from Mamomal, 68,000 barrels on the Durango from Tampico, 115,000 barrels on the Canadolite from Mamomal, and 100,000 barrels on the Vistula from Mamomal.

To Gulf Refining Co. 95,000 barrels on the Cities Service Petrol from Las Piedras, 115,500 barrels on the Gulfwing from Las Piedras, and 65,000 barrels on the Belridge from Las Piedras.

To Tide Water Oil Co. 88,400 barrels on the W. F. Humphrey from Las Piedras.

To Anglo-Mexican Petroleum Co. 52,400 barrels on the San Dunstano from Puerto Mexico.

California Oil Receipts

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended March 9 totaled 365,000 barrels, a daily average of 52,143 barrels, against 863,000 barrels, a daily average of 123,285 barrels for the week ended March 2 and a daily average of 73,393 barrels for the four weeks ended March 9. Details follow:

	Bbls. of 42 Gls.
At Atlantic Coast Ports—	
New York	230,000
Philadelphia	135,000
Total	365,000
Daily average	52,143
Daily average four weeks	73,393
Distribution of total California oil receipts is as follows:	
Gasoline	287,000
Gas oil	78,000

Los Angeles shipments for the East Coast during the week ended March 8 included the following cargoes:

To New York, 81,000 bbls. of gasoline on the K. R. Kingsburg.

To Bayonne, 81,800 bbls. of tops on the Herman Falk.

To Boston, 97,200 bbls. of gasoline on the Dixie Arrow.

To Philadelphia, 78,800 bbls. of gasoline on the William H. Doheny.

To Richmond, 65,300 bbls. of crude oil on the J. C. FitzSimmons and 74,000 bbls. of crude oil on the W. S. Miller.

GOVERNMENT PROPOSES CHANGES IN U. S. MOTOR

(Continued from Page 32)

7. Sulphur—Method 520.11. Sulphur shall not exceed 0.10 per cent.

8. All tests shall be made according to the methods of testing contained in Part 2 of F.S.B. Specification No. 2d, (Bureau of Mines Technical Paper 323B).

Appendix

At a meeting of the Technical Committee on Lubricants and Liquid Fuels held on February 16, 1929, it was agreed that the 10 per cent point shall not be less than 122 degrees F. except that for every per cent loss less than 4 per cent obtained on the A.S.T.M. distillation, the minimum 10 per cent temperature requirement shall be lowered 3 degrees F. This applies to both grades of gasoline.

It was also agreed that the following reservation should be inserted as a separate paragraph at the end of Section 6 of both specifications:

"When gasoline is purchased for use in very hot weather or for tropical storage, or when there is a probability of such use or storage, the Government reserves the right to require that the lower limit at the 10 per cent point be not less than 140 degrees F., with the same corrections for distillation loss as applied at 122 degrees F."

COMPARISON OF MID-CONTINENT CRUDES

(Continued from Page 34)

REALIZATIONS RUNNING 30 GRAVITY MID-CONTINENT CRUDE

Skimming

Gasoline	22.00%	$0.06875	$1.51
Kerosene	12.00	.05500	.66
Gas oil	25.00	.03250	.81
Fuel oil	39.00	.01250	.49
Loss	2.00		
Realization per 100 gallons			$3.47
Realization per barrel			1.46
Crude oil cost		$0.96	
Refg. and deprec.		.10	
P. L. gath. and transp.		.20	1.26
Profit per barrel			$0.20

Skimming and Cracking

Gasoline	42.00%	$0.06876	$2.89
Kerosene	16.00	.05500	.88
Fuel oil	37.00	.01250	.46
Loss	5.00		
Realization per 100 gallons			$4.23
Realization per barrel			1.78
Crude oil cost		$0.96	
Refg. and deprec.		.25	
P. L. gath. and transp.		.20	1.41
Profit per barrel			$0.37

In comparing the above crude oils, we find the most noticeable points of difference are: First. the larger kerosene yield of the Mid-Continent crude. Only a small percentage of kerosene is obtainable from West Texas crude.

The next point to which we would call attention is the fact that while the yields of gasoline from 30 gravity Mid-Continent and 30 gravity West Texas crude are practically identical, gasoline from the West Texas crude has a considerably higher content of aromatic and naphthene compounds, which give it a decidedly higher antiknock value. Engine tests on straightrun gasoline from West Texas crude indicate that this material has a benzol equivalent of 44 per cent.

The third point to which we would call attention is that the West Texas crude has a high content of natural low cold test lubricants which can be processed without cold settling or pressing.

In making the above comparisons, we have not considered any of the higher gravity light green or red crudes which are found to some extent in the Mid-Continent Field, and whose high lubricating oil and wax content enables the refiner who is strategically situated to obtain these crudes to obtain a better realization from them. Our experience with the 30 gravity black Mid-Continent crude indicates that under present conditions it does not pay to process these to obtain the comparatively small wax and lubricating oil content.

Neither the Mid-Continent Field nor the West Texas Field is advantageously situated with respect to the world's domestic and foreign markets for refined products, but in our opinion the West Texas Field has an advantage over the Mid-Continent Field because it is closer to the Gulf ports, which offer a decided advantage in transportation rates both to the East Coast and to foreign markets.

TO NARROW TANK CAR—TANK WAGON SPREAD

(Continued from Page 33)

general improvement in quality of gasolines marketed in the East. A few years ago, refiners were content with delivering the regular U. S. Motor grade of gasoline to their tank wagon customers, and charging a 3 to 4-cent premium for better grades of gasoline. Within two years, however, several of the large companies here have adopted a policy of giving their customers higher grades of gasoline, at the regular tank wagon price schedule, and thus, in all ignorance, motorists are now getting for 19 cents at retail a quality of motor fuel which would have cost them 21 or 22 cents under similar conditions a few years ago.

While nothing official has been forthcoming from any of the large companies relative to plans for bringing about economies to narrow the spread between tank car and tank wagon prices on gasoline, it is known that several have been giving this subject serious consideration. It is expected that something definite will be forthcoming in this direction shortly, and that the aid of the American Petroleum Institute and possibly some government research agencies may be enlisted to bring to light facts which may aid in furthering additional economies in gasoline distribution.

EAST CENTRAL TEXAS HAD THREE COMPLETIONS

CORSICANA, Tex., Mar. 18.—One small pumper at Boggy Creek Dome, Anderson County, and two abandonments of shallow wildcats, one in Falls County and the other in Leon County, were the only completions in East Central Texas the past week. Operations, except at Boggy Creek, where a steady development is under way, although curtailed to the minimum, continued inactive, comparatively few rigs actually drilling.

Humble Oil & Refining Co. has put its No. 3 Lizzie Smith on the pump at a total depth of 3,728 feet, but so far no estimate has been made of its production.

Two new locations were made at Boggy Creek, Nos. 2-B and 3-A Elliott & Clark. Both are on the Cherokee County side.

One test abandoned was Caruth & Stewart's No. 1 Flowers, Falls County, which showed salt water at a total depth of 1,209 feet. It was plugged to 1,070 feet and quit. In Leon County, Ballard Oil Corp. abandoned No. 1 Tubbs as dry in a sandy shale at 2,001 feet.

Daily average production in the East Central Texas district for the week ending March 16 was:

Boggy Creek	3,633
Cedar Creek	185
Currie	441
Mexia	5,891
Minerva	715
Nigger Creek	370
Powell	8,937
Richland	360
Thrall	30
Wortham	1,330
Total	21,892
Total previous week	22,108
Decrease	216

Brief Items for Petroleum Refiners

ANGUS VICE PRESIDENT OF MAGNOLIA PETROLEUM CO.

E. P. Angus well known in marketing circles of the Southwest at a meeting of the board of directors of the Magnolia Petroleum Co., Dallas, was elected a vice president and general sales manager of the company. Mr. Angus has been connected with the marketing department of Magnolia company since January 1, 1912, and recently has served the company as acting general sales manager.

E. P. Angus

Mr. Angus is a native of Texas having been born at Corsicana. Before entering the employment of the Magnolia company he was connected for several years with one of the pioneer oil companies of the state. Mr. Angus' offices are located in the general office building of the company at Dallas.

PROGRAM OF I.O.M.A. FOR ANNUAL MEETING

CHICAGO, Mar. 16.—The annual meeting of the I.O.M.A. for the election of officers will be held at the Hotel Stevens, Chicago, March 25 and 26. The only exhibits will be those of the organization consisting of advertising displays and of equipment bearing the emblems of the organization which all members are pledged to display at their places of business.

The morning of the first day will be devoted to meetings of the board of directors and of the marketing, lubricating, credential and nominating committees. The election takes place in the afternoon while the session is in progress. The addresses will be by the officers including Chairman of the Board C. L. Maguire, president; E. H. Hilp and C. Y. Hinchey, executive manager, protem. These officers will detail the history of the organization during the past year and speak of its future plans.

On the morning of the second day the first business will be the announcement of the result of the election and the introduction of the new trustees. Following, Jay Trexler, manager of the Red Hat Motor Oil department, will speak on "Red Hat Motor Oils—An Accomplisment." Discussion will follow.

At the afternoon session, Henry Bussey Floyd, the organization's patent attorney, will tell the members about "Your Red Hat Brands." Other addresses are scheduled on "The Independent Oil Men of America, a Business Opportunity," and "The Future as I See It."

PAN-AMERICAN STARTS OPERATING LARGE REFINERY ON ARUBA ISLAND

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Mar. 2.—Pan American Petroleum & Transport Corp. has started operations at its new refinery at Aruba, Dutch West Indies, where it is running the Venezuelan crude production of its subsidiary, Lago Oil & Transport Co. Topping operations were started about a week ago, and the production has gone as high as 40,000 bbls. daily, although temporary shutdowns have at times carried the average daily figure to a much lower level. T. S. Cooke, manager of the manufacturing department of the Pan American, is at Aruba overseeing the starting of the refinery operations, as is P. H. Harwood, vice president of Pan American. W. W. Holland, formerly superintendent of the Standard Oil refinery at Wood River, Ill., is plant manager at the new Aruba refinery.

Runs at the new Pan American refinery thus far have been largely experimental and the plant is not expected to settle into normal production until March 8 to 10. By the middle of March, it is expected, additional stills will be placed in operation, with the daily run total expected to aggregate 90,000 bbls. by March 15.

Installation of cracking stills is still in progress, and it is not believed that cracking units will go into production until the latter part of June. The company is installing eight Cross stills at the Aruba plant.

Pan American is investing an aggregate of close to $11,000,000 in its new Aruba plant, which is one of the most modern refining units in the world. The refinery alone represents an investment of $7,400,000.

When the Aruba plant gets into normal operation toward the latter part of June, Pan American will institute a marked change in its manufacturing and marketing operations. Hitherto, this company has been a leading factor in the fuel oil business, marketing between 15,000,000 and 20,000,000 bbls. of bunker oil annually, against less than 5,000,000 bbls. of gasoline per year. The Aruba refinery is expected to refine about 8,000,000 bbls. of gasoline annually, which will give Pan American a large volume of motor fuel and require expansion in existing marketing facilities. Present marketing properties of Pan American in the East are inadequate to care for the flood of gasoline which its new Aruba refinery will shortly release, and it is expected that considerable quantities of this motor fuel will have to be marketed in jobbing and export channels while the distributive outlets of Pan American in eastern domestic markets are undergoing expansion.

In preparation for its increased output of gasoline, Pan American during the past year or so added to its distributing properties in the East. The company has purchased a 50 per cent interest in the American Oil Co., a prominent distributor

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EFFORT TO RE-ESTABLISH CALIFORNIA QUOTATIONS

LOS ANGELES, Calif., Mar. 19.—A concerted attempt is being made to re-establish the original quotations on the retail price of gasoline existing before the start of a gasoline war which started around the first of the current year. Many stations have already posted prices of 18½ cents, an increase of 6 cents over the price at which gasoline has been selling at retail for the past several weeks.

Standard Oil of California announced effective March 19 a posted tank wagon or wholesale price of gasoline of 19 cents at San Francisco and 18½ cents at Los Angeles. The price of gasoline to dealers is lower than the wholesale prices, the dealer discount being 3 cents under the tank wagon price which will make the dealer price in San Francisco 16 cents and at Los Angeles 15½ cents. At present the posted tank wagon price is 13 cents and 12½ cents at San Francisco and Los Angeles respectively with the dealer price 3 cents lower in each case. This adjustment of base prices affects all points on the Pacific Coast.

N. Y. GASOLINE SPECIFICATIONS

NEW YORK, Mar. 19.—Governor Roosevelt has signed the "pure gasoline" bill fixing minimum specifications for gasoline for internal combustion engines. Opposition by oil interests was withdrawn some time ago when it became clear that law aimed only at fixing standards for motor and airplane gas equal to federal specifications.

NOW WITH VISCOSITY OIL CO.

CHICAGO, Mar. 16.—John Stapp, until recently salesman for the Marland Refining Co. in its Illinois territory, has gone with the Viscosity Oil Co. of this city as its Illinois salesman.

TO RUN FIRST CRUDE OIL AT UNIVERSITY REFINERY

Preparations have been practically completed for the first crude oil run at the refinery of the University of Oklahoma located at Norman, Okla. The plant which has been under construction for several months will be completed by April 1.

The Indian Territory Illuminating Oil Co. has given the university a tank car of the crude oil from the discovery well of the Oklahoma City Field. The crude will be the first to run to the still. The refinery was built under the supervision of the Petroleum Engineering School of the university and will be operated as part of the laboratory work of those students who are specializing in refinery engineering. Prof. Fred Padgett is in direct charge of the refinery.

The refinery has a capacity of approximately 200 bbls. daily. The still is of the tube type with complete tower equipment for fractionation.

NATIONAL OIL SHOW ORGANIZES

CHICAGO, Mar. 16.—The National Oil Show, Inc., has been organized and the officers elected as follows: President, John A. Cadle; vice president, C. J. Worden; treasurer, S. O. Scott, and secretary and managing director, Lou Harrington. A full board was also elected. The organization plans to hold an exhibit of equipment and devices used by oil men and of oil products in Chicago in the fall.

BUYS LARGE COMPANY

CHICAGO, Mar. 16.—Announcement has been made of the purchase by the Sinclair Refining Co., of the business of the Central Ohio Oil Co., of Columbus, Ohio. The latter company is one of the largest independent jobbing concerns in Ohio.

PARAGON TO INCREASE CAPACITY OF REFINERY

TOLEDO, Ohio, Mar. 16.—A program of expansion that will involve the investment of $1,000,000 at the Toledo plant, increasing its capacity 50 per cent, was approved by directors of the Paragon Refining Co., at the annual meeting of stockholders in the office of Pres. E. W. Edwards in Cincinnati.

At the same time stockholders approved a plan for increasing the capital structure of the company by which 106,000 shares of new common stock will be issued to present stockholders at $24 a share, that portion not taken by stockholders being underwritten by Otis & Co. of Cleveland, New York and Toledo.

This new issue of stock will give the company $2,500,000 of new capital to cover the cost of expansion and to carry out other extensive plans of the extensive marketing organization that has been built up.

Since the plant was taken over by the E. W. Edwards interests several years ago, there has been an almost continuous program of expansion. Strong marketing organizations have been acquired in Detroit, Cleveland and elsewhere. In the Detroit deal the company acquired 10½ acres of land on the River Rouge, a great storage plant which will be utilized by the Toledo company in the plan of development it now has. This plan contemplates the immediate acquisition of a fleet of tankers by which gasoline and other products of the Toledo refinery may be taken to Detroit, Cleveland and other cities at a great saving over the all-rail hauls at the present.

TO HANDLE LION OIL OUTPUT

CHICAGO, Mar. 16.—Effective April 1 the Lion Oil & Refining Co., of El Dorado, Ark., will market the output of its refinery through the Petroleum Exchange, Inc., 624 South Michigan Avenue, of this city, of which Al. Talbot is president and C. M. Brennan, sales manager. This organization will have the exclusive sale of the products of the refinery in the territories of the Standard Oil Cos. of Indiana and Ohio. The only exception made is that Ray Spicer of Paris, Ill., will have the sale of road oil in Illinois.

COSDEN LEASES CHICAGO OFFICE

CHICAGO, Mar. 16.—For its permanent Chicago offices J. S. Cosden & Co. has leased the thirty-third floor of the Willoughby Tower at the corner of Madison and South Michigan Avenue. The building is just about completed and George N. Moore, who will be in charge of the office, states that he is promised possession April 15 and hopes to be in the new offices by May 1. The office recently opened in the Straus Building will be given up as soon as the new location is ready.

TO DISTRIBUTE ETHYL GASOLINE

CHICAGO, Mar. 16.—The Bartels-Maguire Co., with refinery at East Chicago and headquarters at Milwaukee, Wis., has been appointed by the Ethyl Gasoline Corp. a distributer of Ethyl gasoline in Wisconsin. It is not, however, the exclusive distributors of this product in Wisconsin, as the manufacturers of the Ethyl fluid, which is blended with gasoline, have decided to give no more exclusive franchises for any state or number of states.

NEW REFINERY MANAGER

Norman Kirkham, for 11 years with Imperial Oil, Ltd., has been appointed manager of the Arctic refinery at Lethbridge, Alberta. Considerable extensions are being contemplated to the Arctic plant.

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

CORROSION WITH CHLORINE COMPOUNDS

In treating with weak solutions of sodium and calcium hypochlorite the pumps employed in handling the solutions of either suffer considerably from corrosion. In fact the bronze fittings and packing glands last only a few weeks at the most. Will you tell in The Oil and Gas Journal what metals would best resist the action of these solutions?—W. G. R.

When solutions of chlorine, such as sodium and calcium hypochlorite, are used in contact with metal there may be loss of metal because of the acidity of the solution. The action is very similar in effect to that which is frequently observed when handling oils containing hydrogen sulphide. The water in the mixture combines with some of the chlorine to form hydrochloric acid and hypochlorous acid. This type of corrosion is usually classified as graphitic corrosion, especially when the metal is cast iron.

Graphitic corrosion or graphitic softening has been explained as being the result of selective action on the grains of pure iron. The mass that remains being essentially the non-corrodible substances, such as the carbide, graphite, silicide, oxide of iron and a portion of the iron. A piece of pipe showing this type of corrosion may retain the original form or outline of the part but is so soft that it may be cut with a knife. A piece of graphitized iron may show that the original percentage of total carbon, graphitic carbon, and silicon has been increased three times; while the combined carbon may increase as much as five times.

Steel and wrought iron are considered to be more resistant to this form of corrosion than cast iron. There are a number of special irons and alloys which are known to resist the action of acids and sulphur to a great degree. These include nickel, chromium, and chrome-nickel steels. The higher cost of these alloys is the reason they have not come into more general use, but while the initial expense may seem large, there may be some reduction of cost if all items, such as time down, labor and replacement expense, were considered.

LOSS OF OIL THROUGH HANDLING AND REFINING

We desire to set up a normal loss for storage, handling, and refining, but can find no very definite figures covering this subject. Can you tell us where this information may be obtained?—R. C. H.

A paper was presented before the Technical Meeting of the Western Petroleum Refiners Association at Shreveport, La., June 5, 1928, by L. D. Mann, under the title Refinery Losses and Possible Prevention. This paper was printed in The Oil and Gas Journal, June 7, 1928, page 169.

In this paper it was stated that a conservative estimate would place the annual loss of oil between the well and shipment as the finished product at approximately 7.5 per cent of the crude oil produced. This estimate includes refining, weathering, sediment, and transportation losses.

The total refining loss, including topping, cracking and lubricating oil operations was set at 6.9 per cent. The largest loss indicated was that by cracking, which was 9.7 per cent. Under Mid-Continent conditions the loss from the crude storage tanks may be approximately ½ per cent during the warmer months of the year. Taking the estimate of 7.5 per cent for the total loss and the refining loss at 6.9 per cent, the difference of 0.6 per cent is allowed for the crude oil loss in storage during the period. Of course the larger the refinery and the more departments the lower will be the percentage loss if the plant is modern in every respect. It is thought that a plant handling, say 10,000 barrels a day, will be doing very well to keep the loss below 6 per cent for all causes.

TEST FOR SULPHUR IN OIL

I would like to know how a very small quantity of sulphur may be detected in a distillate? This oil is supposed to be free from sulphur but we wish to be certain about it and will appreciate it if you will help us with the necessary outline or reference?—L. M.

You will find a complete discussion of the methods for detecting sulphur in the article by Lane and Devine in The Oil and Gas Journal, October 20, 1928, page 160, from which the material below is taken.

Clamp a 4-inch pyrex-glass test tube vertically in an iron clamp which has been wound with asbestos string of small diameter. Place a one-quarter inch cube of freshly-cut sodium in the test tube. Apply heat until the sodium melts about one-half inch of sodium vapor is present above the sodium. Remove the source of heat and add immediately 5 drops of the oil to be tested. The oil should be dropped directly into the sodium vapor and not allowed to come in contact with the sides of the hot tube. Replace the burner, heating moderately at first, and gradually bring the lower two-thirds of the tube to a full red heat.

When the tube has been thoroughly heated as just described, remove the flame and allow to cool at room temperature. When completely cooled, crush the lower part of the tube and contents in a perfectly dry, clean mortar. Measure out 10 c. c. of distilled water in a small graduate and add a portion of it drop by drop (using a medicine dropper) to the crushed mass in the mortar, letting each drop react before adding the next. When no further reaction is apparent, add the remainder of the 10 c. c. of water cautiously, directly from the graduate. Filter, catching the filtrate in a 10 c. c. graduate. Wash the mortar contents and the filter with sufficient distilled water to make the volume in the graduate 10 c. c. after filteration. Stir the solution in the graduate thoroughly and, using a funnel, place 5 c. c. of it in a specially designed test tube.

Add a small piece of clean porous tile to the contents of the tube, incline the tube slightly, and add enough hydrochloric acid (specific gravity 1.19) through a funel to make just acid. Immediately after acidifying place over the mouth of the tube a piece of filter paper which has been folded twice and moistened thoroughly with a solution of lead acetate (normal.) Then boil the contents of the tube gently until steam is seen to condense above the gallery of the tube. Remove the filter paper. If sulphur is present, a distinct brown or black spot will be observed against the white background of the filter paper.

DYES SOLUBLE IN GASOLINE AND OTHER NONAQUEOUS SOLVENTS

Could you give me some information about the names and character of the dyes that are soluble in oils and gasoline? What use is made of these dyes in commerce?—A. D. F.

Oil soluble dyes have been used for years in coloring fancy candies, oleomargarine, floor wax, shoe polish, ethyl gasoline, and plates for radio photography. One outstanding oil-soluble dye is the antiseptic oil scarlet used in medicine. This dye is used either as an ointment, a solution of the dye in paraffin, or a solution of the sulphonic acid derivative in water as an antiseptic and an aid in the promotion of granulation in wounds that do not heal readily. C. E. May and H. Hunt have made and studied a number of dyes which they have described in Industrial and Engineering Chemistry, Volume 20, page 384, 1928.

Each new dye has been given a short name which has been selected on account of the color, the relation of the dye to some other dye, or some other point of interest. This work included the study of 30 dyes each of which was soluble in nonaqueous solvents. None of the dyes showed an appreciable solubility in water. Toluene and carbon tetrachloride were found to be very good solvents. Other solvents, such as gasoline and linseed oil, were useful, but the degree of solubility was not determined.

The following table shows the dyes made, the intermediates used, and the melting points of the dyes:

DYES MADE AND STUDIED

Dye	Intermediates	Melting point °C.
Indiana Red	3-o-Xylidine and 2-naphthol	125–30
Xylidine Brown	3-o-Xylidine and 1-amino-2-naphthol	140–45
Scarlet H	4-m-Xylidine and 2-naphthol	132–36
Xylidine Brown M	4-m-Xylidine and 1-amino-2-naphthol	140–44
Maroon I	4-m-Xylidine and phenol	172–74
Maroon II	4-m-Xylidine and resorcinol	275–80
Walnut	4-m-Xylidine and guaiacol	110–12
Oil Maroon	p-Xylidine and 2-naphthol	115–20
Xylidine Red N	p-Xylidine and 1-amino-2-naphthol	105–6
Xylidine Red	Aminoazo-4-m-xylene and 2-naphthol	145–50
Naphthol Brown	4-m-Aminoazo-4-m-xylene and 1-amino-2-naphthol	140–50
Sudan VI	Aniline and 1-naphthol	148–50
Sudan VII	Aniline and 1-amino-2-naphthol	110–15
Sudan VIII	Aniline and 1-nitroso-2-naphthol	106
Oil Brown	o-Aminoazotoluene and salicylic acid	125–30
Sudan IX	o-Aminoazotoluene and resorcinol	Above 360
Cloth Red BB	o-Aminoazotoluene and 1-naphthol	153–56
Maroon III	o-Aminoazotuluene and phenol	290–95
Scarlet M	Aminoazo-p-xylene and 2-naphthol	180–85
Naphthol Brown II	Aminoazo-p-xylene and 1-amino-2-naphthol	110–15
Fast Brown O	2-Naphthylamine and 1-naphthol	146
Aniline Yellow G	2-Naphthylamine and dimethylaniline	153–55
Benzidine Puce A	Benzidine and 2 molecules 1-naphthol	255–60
Benzidine Brown	Benzidine and a molecule phenol and a molecule 1-naphthol	Above 360
Congo Red A	Benzidine and 2 molecules 1-naphthylamine	Above 360
Sudan X	o-Anisidine and 1-amino-2-naphthol	135–40
Rose	Aminoazo-2-naphthylamine and 2-naphthol	107–9
Azo Coccine RR	Commercial xylidine and 1-naphthol	113–18
Cardinal	6-Nitro-asym-m-xylidine and 2-naphthol	180–85
Naphthol Black	1-Amino-2-naphthol and dimethylaniline	135–40

CYLINDERS FOR COMPRESSED GAS

What are the specifications for the cylinders which are used for distributing compressed natural gas? Are these cylinders considered safe at the different temperatures which we have in the summer?—R. T. S.

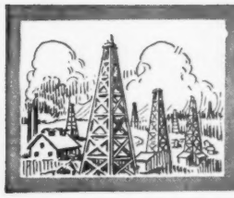
The cylinders used for holding compressed natural gas must comply with the regulations of the Interstate Commerce Commission and these are based on the specifications required by the Bureau of Explosives. See I. C. C. Regulations for the transportation of Explosives, Revised Jan. 1, 1923. Also Supplements 1, 2 and 3.

The compressed natural gas now on the market is largely propane, and in some sections of the country, the product may contain a small quantity of butane in addition. The boiling point of propane is 47 degrees below zero and that of butane is 34 degrees Fahrenheit above zero. The vapor pressure of propane at 70 degrees Fahrenheit is 124 pounds per square inch, while that of butane is 31.6 per square inch. The transportation of these two gases in steel cylinders is not a new development; however, the high degree of separation and control of plant manufacture is the result of recent research.

The cylinders used are made of seamless steel. A container adopted by some companies is known as the spun type, which is made of one piece of steel and has no seams which might cause leaks. There are two specifications for cylinders permitted by Interstate Commerce Commission and are known as I. C. C. 7-70 and I. C. C. 26-150.

The I. C. C. 7-70 may be used where pressure of the material shipped is not in excess of 70 pounds per square inch at 70 degrees Fahrenheit and the water capacity of the cylinder is 16 gallons or less. These cylinders are made for a pressure not to exceed 116 pounds per square inch and are tested for 350 pounds. This type of cylinder usually carries a tube extending to within one-half inch of the bottom.

The I. C. C. 26-150 is designed for a charging pressure of 150 pounds per square inch and is tested at 600 pounds per square inch. The maximum size permitted for this cylinder is 220 pounds water capacity or about 26½ gallons. In purchasing new cylinders it is probably better to get the I. C. C. No. 26, even for bottling butane alone.



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	Mar. 19		Mar. 12		Mar. 5	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.06½	.06¾	.06½	.06⅝	.06½	.06⅝
56-58 450 endpoint	.06½	.06¾	.06½	.06⅝	.06½	.06⅝
58-60 450 endpoint	.06½	.06¾	.06½	.06¾	.06½	.06¾
*56-60 437 endpoint (U. S. Motor)	.0702		.0701		.0702	
*60-62 437 endpoint	.0741		.0725		.0729	
*60-62 400 endpoint	.0737		.0733		.0737	
64-66 375 endpoint	.07½	†.07¾	.0800		.0829	
68-70 360 endpoint	.08⅛	.08¼	.08⅛	.08¼	.08	.08¼
64-66 437 endpoint (blend)	.06¾	.07	.06¾	.07	.06¾	.07
NORTH TEXAS—						
56-58 450 endpoint	.06½	.06⅝	.06⅜	.06½	.06¼	.06½
58-60 450 endpoint	.06½	.06⅝	.06⅜	.06½	.06¼	.06½
58-60 437 endpoint (U. S. Motor)	.06⅝	.06¾	.06⅝	.06¾	.06½	.06¾
60-62 400 endpoint	.07	.07¼	.07	.07¼	.07	.07¼
64-66 390 endpoint	.07¼	.07½	.07¼	.07½	.07¼	.07½
64-66 375 endpoint	.07¼	.07¾	.07½	.08	.07¾	.08
68-70 360 endpoint	.08	.08¼	.08	.08¼	.08	.08¼
64-66 437 endpoint (blend)	.06½	.06¾	.06½	.06¾	.06½	.06¾
NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.07¼		.07¼		.07	.07¼
ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.07¼		.07¼		.07	.07¼
PENNSYLVANIA—						
52-54 Naphtha	.07¾	.08	.08		.08¼	.08½
54-56 Naphtha	.07¾	.08	.08	.08¼	.08½	.08¾
58-60 Gasoline	.08½	.08¾	.08½	.08¾	.09	.09¼
60 Gasoline	.08¾	.09	.09	.09¾	.09¾	.10
62 Gasoline	.09¾	.10	.09¾	.10	.10½	.10¾
64 Gasoline	.10¼	.10½	.10¼	.10½	.10½	.10¾
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.06	.07	.06	.07	.07	.08
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.06⅝	.06¾	.06⅝	.06¾	.06⅝	.06¾
56-58 450 endpoint	.06⅝	.06¾	.06⅝	.06¾	.06⅝	.06¾
58-60 437 (U. S. Motor)	.06¾	.07	.06¾	.07	.06¾	.07
60-62 400 endpoint	.07¼	.07½	.07¼	.07½	.07¼	.07½
64-66 375 endpoint	.07¾	.08	.07¾	.08	.07¾	.08
68-70 360 endpoint	.08¼	.08½	.08¼	.08½	.08¼	.08½
64-66 437 endpoint (blend)	.07	.07⅛	.06⅞	.07⅛	.06¾	.07
GULF COAST (Export)—						
58-60 (U. S. Motor)	.08½		.08½		.08½	
60-62 400 endpoint	.09½		.09½		.09½	
61-63 390 endpoint	.09¾		.09¾		.09¾	
64-66 375 endpoint	.10		.10		.10	

*Weighted average prices March 18, 11 and 4 as reported by representative refiners. Sales to jobbers only. †No sales reported. Price shown general market.

NATURAL GASOLINE

	Mar. 19		Mar. 12		Mar. 5	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.07½		.06¾	.07	.06⅞	.07
Grade AA, 80-87, 375 e.p., rec. 90%	.07½		.06¾	.07	.06⅞	.07
Grade B, 76-83.9, 375 e.p., rec. 85%	.06¾		.05¾		.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.06½	.06¾	.05½	.05¾	.05⅝	.05¾
Grade C, 80-90, 375 e.p., rec. 78%	.06¼		.05	.05¼	.05¼	.05¾
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.07½		.07		.06⅞	.07
Grade AA, 80-87.9, 375 e.p., rec. 90%	.07½		.06¾	.07	.06¾	.07
Grade B, 76-83.9, 375 e.p., rec. 85%	.06¾		.05¾		.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.06½	.06¾	.05½	.05¾	.05⅝	
Grade C, 80-90, 375 e.p., rec. 78%	.06¼		.05	.05¼	.05¼	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.07¾		.07½		.07½	
Grade BB, 84-92, 375 e.p., rec. 85%	.06¾		.06¼		.06¼	
Grade C, 80-92, 375 e.p., rec. 78%	.06½		.05½		.06	
CALIFORNIA—						
75-78, 375-390 endpoint	.06	.06½	.06	.06½	.06	.06½
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.07½		.07		.07	
Grade AA, 80-87 9, 375 e.p., rec. 90%	.07½		.06¾	.07	.06¾	
Grade B, 76-83.9, 375 e.p., rec. 85%	.06¾		.05⅜		.05¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.06½		.05⅝	.05¾	.05⅝	
Grade C, 80-90, 375 e.p., rec. 78%	.06¼		.05		.05¼	

BURNING OIL

	Mar. 19		Mar. 12		Mar. 5	
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.06	.06⅛	.05⅞	.06	.05½	.05¾
42-44 water white Kerosene	.06¼	.06½	.06⅛	.06⅜	.06	.06⅞
NORTH LOUISIANA—						
41-43 water white Kerosene	.06¾		.06¾		.06¼	.06½
NORTH TEXAS—						
41-43 water white Kerosene	.05⅞	.06	.05¾	.06	.05½	
40-42 water white Kerosene	.05¾	.06	.05⅝	.05¾	.05⅝	.05½
ARKANSAS—						
41-43 water white Kerosene	.06¾		.06½	.06¾	.06¼	.06½
PENNSYLVANIA—						
43 Kerosene prime white	.07		.07		.07	
45 Kerosene water white	.07⅛	.07¼	.07	.07⅛	.07	.07¼
46 Kerosene water white	.07½	.07¾	.07½	.07¾	.07½	.07¾
47 Kerosene water white	.07¾	.08	.07¾	.08	.07¾	.08
300 Mineral Seal	.07	.07¼	.07	.07¼	.07	.07¼
CALIFORNIA—						
38-40 water white Kero. (high-burning test)	.06½	.07	.06	.06½	.06	.06½
Engine distillate, 43-44, 445 endpoint	.06½	.07	.06½	.07	.06½	.07
Engine distillate, 42-44 480 endpoint	.06	.06½	.06	.06½	.06	.06½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.06	.06¼	.05¾	.06	.05¾	.05⅞
42-44 water white Kerosene	.06¼	.06½	.06¼	.06½	.06⅛	.06¼
GULF COAST (Export)						
41-43 prime white	.06¾		.06¾		.06¾	
41-43 water white	.07¾		.07¾		.07¾	

FUEL OILS

	Mar. 19		Mar. 12		Mar. 5	
OKLAHOMA (Group 3)—						
*Below 18 Fuel Oil, per bbl.	.52½	.55	.52½	.55	.52½	.55
*18-22 Fuel Oil, per bbl.	.57½	.62½	.57½	.62½	.57½	.62½
22-26 Fuel Oil, per bbl.	.62½	.67½	.62½	.67½	.62½	.67½
24-26 Fuel Oil, per bbl.	.67½	.72½	.67½	.72½	.67½	.72½
26-30 Fuel Oil, per bbl.	.85	.95	.85	.95	.85	.95
28-30 Fuel Oil, per bbl. (industrial)	.90	1.00	.90	1.00	.95	1.00
28-30 Fuel Oil, per bbl. (zero cold test)	1.05	1.10	1.05	1.10	1.15	1.20
32-36 Gas Oil (industrial)	.03	.03⅛	.03	.03⅛	.02⅞	.03
32-36 Gas Oil (straw color)	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03
36-38 Distillate	.03⅞	.04	.04	.04⅛	.04	.04
38-40 Straw Distillate	.04	.04⅛	.04⅛	.04⅜	.04¼	.04

*Fuel Oil of 60 to 70 cold test available as low as 50 cents.

NORTH TEXAS—						
Below 20 Fuel Oil	.65	.70	.65	.70	.65	.70
24-26 Fuel Oil, per bbl.	.70	.72½	.70	.72½	.70	.72
32-36 Gas Oil (straw)	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03
38-40 Straw Distillate	.04	.04⅛	.04⅛	.04⅜	.04¼	.04
NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.75	.80	.70	.80	.70	.80
32-36 Gas Oil	.03½		.03½		.03½	
ARKANSAS—						
33-36 Distillate	.04⅛	.04¼	.04⅛	.04¼	.04¼	.04
32-36 Gas Oil (straw)	.03½		.03½		.03½	.03
16-22 Refinery Fuel Oil, per bbl.	.70	.80	.70	.75	.70	.80
GULF COAST (South Texas)—						
Gas Oil	.03½	.04	.03½	.04	.03½	.04
Bunker C Fuel (cargo lots), per bbl.	.72½	.75	.72½	.75	.72½	.75
Bunker C Fuel (small lots)	.95	1.00	.95	1.00	.95	1.00
PENNSYLVANIA—						
30-34 Fuel oil	.04½	.04¾	.04½	.04¾	.04½	.04
36-40 Fuel Oil	.05	.05⅛	.04¾	.05	.04¾	.05
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.03¾	.04	.03¾	.04
26-32 Distillate	.03	.03½	.03	.03½	.03	.03
15-20 Fuel Oil, Bunker (at tide water)	.65	.85	.65	.85	.70	.85
15-20 Fuel Oil (cargo lots), per bbl.	.70	.85	.70	.85	.70	.85
27 plus Diesel, per bbl.	.90	1.05	.90	1.05	.95	1.05
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, Group 3, bbl.	.62½	.67½	.62½	.67½	.65	.67½
18-22 Fuel Oil, per bbl.	.55	.60	.55	.60	.55	.62½
16-20 Smackover, per bbl.	.90	.95	.90	.95	.90	.95
28-30 Fuel Oil (zero)	1.10	1.20	1.10	1.20	1.20	1.25
32-36 Gas Oil, zero	.03⅛		.03¼	.03½	.03⅜	.03⅝
32-36 Gas Oil (industrial)	.03	.03⅛	.03⅛	.03¼	.03¼	.03½
36-38 Distillate	.03¾	.04	.04	.04¼	.04¼	.04½
38-40 Straw Distillate	.04	.04⅛	.04¼	.04½	.04½	

LUBRICATING OIL AND WAX

	Mar. 19		Mar. 12		Mar. 5	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06	.06½	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.05¼	.05½	.05¼	.05½	.05¼	.05½
150 vis., 3 color, 20-25 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
150 vis., 4 color, 20-25 cold test	.07	.07¼	.07	.07¼	.07	.07¼
180 vis., 3 color, 23-28 cold test	.08¾	.09	.08¾	.09	.08¾	.09
180 vis., 4 color, 23-28 cold test	.08¼	.08¾	.08¼	.08¾	.08¼	.08¾
180 vis., 5 color, 23-28 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
200 vis., 3 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
200 vis., 4 color, 23-28 cold test	.09	.09¼	.09	.09¼	.09	.09¼
200 vis., 5 color, 23-28 cold test	.08½	.08¾	.08½	.08¾	.08½	.08¾
240 vis., 3 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 4 color, 25-30 cold test	.11¾	.12	.11¾	.12	.11¾	.12
240 vis., 5 color, 25-30 cold test	.10¾	.11	.10¾	.11	.10¾	.11
280 vis., 3 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
280 vis., 4 color, 25-30 cold test	.12¾	.13	.12¾	.13	.12¾	.13
280 vis., 5 color, 25-30 cold test	.11¾	.12	.11¾	.12	.11¾	.12
Cylinder Stocks:						
600, steam refined, light green	.09	.10	.09	.10	.09	.10
600, steam refined, dark green	.07	.08	.07	.08	.07	.08
190-200 vis., D color Bright Stock	.33	.35	.33	.35	.33	.35
150-160 vis., D color Bright Stock	.30	.32	.30	.32	.30	.32
150-160 vis., E color Bright Stock	.28	.30	.28	.30	.28	.30
Waxes:						
124-126 White Crude Scale Wax	.03¾	.04	.03¾	.04	.03¾	.04
PENNSYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom	.07¾	.08	.07¾	.08	.07¾	.08
36 Miners' Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
150, 3 color	.21½	.22	.21½	.22	.21½	.22
180, 3 color	.25½	.26	.25½	.26	.25½	.26
200, 3 color	.27½	.28	.27½	.28	.27½	.28
220, 3 color	.30	.30½	.30	.30½	.30	.30½
600, steam refined	.22½	.23	.22	.22½	.22	.22½
635, steam refined	.28½	.29	.27½	.28	.27½	.28
650, steam refined	.29	.29½	.27½	.28	.27½	.28
600, Pennsylvania flash	.31½	.32	.31½	.31	.30½	.31
630, Pennsylvania flash	.37	.37	.36½	.37	.36½	.37
600, E filtered	.25½	.26	.25½	.26	.25½	.26
600, D filtered	.29½	.30	.29½	.30	.29½	.30
550, E filtered	.15½	.16	.15½	.16	.15½	.16
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.39	.40	.39	.40	.39	.40
*122-124 White Crude Scale Wax	.04		.04		.04	
*124-126 White Crude Scale Wax	.04¼		.04¼		.04¼	

*At New York

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.06½	.07	.06½	.07	.06½	.07
No. 3 color, 200 vis., pale oil	.09	.10	.09	.10	.09	.10
No. 3 color, 300 vis., pale oil	.10½	.11	.10½	.11	.10½	.11

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

No. 3½ color, 500 vis., pale oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 4 color, 750 vis., pale oil	.14	.15	.14	.15	.14	.15
No. 5 to 6 color, 200 vis., red oil	.07½	.08½	.07½	.08½	.07½	.08½
No. 5 to 6 color, 300 vis., red oil	.08½	.09½	.08½	.09½	.08½	.09½
No. 5 to 6 color, 500 vis., red oil	.09½	.10½	.09½	.10½	.09½	.10½
No. 5 to 6 color, 750 vis., red oil	.13	.14	.13	.14	.13	.14
No. 2½ color, 200 vis., pale filtered	.11½		.11½		.11½	
No. 2½ color, 300 vis., pale filtered	.13	.13¼	.13	.13¼	.13	.13¼
No. 2½ color, 500 vis., pale filtered	.15½	.16	.15½	.16	.15½	.16
No. 2½-3 color, 750 vis., pale filtered	.18	.20	.18	.20	.18	.20
CALIFORNIA—						
130 vis., 2½-3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
350 vis., 3½-4 color	.13½	.13¼	.13½	.13¼	.13½	.13¼
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½-5 color	.15¼	.15½	.15¼	.15½	.15¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.16¼	.16	.16¼

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Mar. 19		Mar. 12		Mar. 5	
‡Gasoline, U. S. Motor, 58-60, 437	.09		.09¼		.09¼	
Kerosene, water white, 41-43	.08¼	.08½	.08½		.08½	
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05		.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 32-36 gravity	.05¼		.05¼		.05¼	
25 pale Paraffin Oil	.11¾		.11¾		.11¾	
28 pale Pariffin Oil	.07½		.07½		.07½	
285 red Paraffin Oil	.11½		.11½		.11½	
250 red Paraffin Oil	.11		.11		.11	
225 red Pariffin Oil	.09½		.09½		.09½	
200 red Pariffin Oil	.09		.09		.09	
Refined Wax:						
120-122 a.m.p., per lb.	.04⅞		.05¼		.05¼	
125-127 a.m.p., per lb.	.05⅛		.05½		.05½	
130-132 a.m.p., per lb.	.06¼		.06¼		.06¼	
133-135 a.m.p., per lb.	.06¾		.07		.07	
135-137 a.m.p., per lb.	.07½		.07½		.07½	
Petrolatum in barrels, carload lots, per lb.						
Dark green	.02		.02		.02	
Amber	.03½		.03½		.03½	
Extra amber	.03¾		.03¾		.03¾	
Cream	.06½		.06½		.06½	
Lily white	.07½		.07½		.07½	
Snow white	.08½		.08½		.08½	

*Litherage, 5.0c a barrel extra. †Litherage, 6.5c a barrel extra. ‡Price of 9¼ cents became effective March 5.

*NEW YORK (BAYONNE) EXPORT PRICES

	Mar. 19		Mar. 12		Mar. 5	
Kerosene, standard white, in cases	.1765		.1765		.1765	
Kerosene, water white, in cases	.1890		.1890		.1890	
600, steam refined cylinder stocks, in bbls.		.31	.30	.31	.30	.31
635, steam refined		.34	.32	.33	.32	.33
650, steam refined		.38	.36	.37	.36	.37
600, Pennsylvania flash		.39	.38	.39	.38	.39
630, Pennsylvania flash		.44	.43	.44	.43	.44
600, Warren E	.34½		.34	.35	.34	.35
600, Oil City E	.33½		.33		.33	
Light 140-150 Bright Stocks	.48		.46½		.46½	
Dark 140-150 Bright Stocks	.47		45		.45	

*Export prices on U. S. Motor Gasoline, prime white and water white kerosene withdrawn.

LOS ANGELES EXPORT PRICES

	Mar. 19		Mar. 12		Mar. 5	
Kerosene, water white	.05½	.06	.05½	.06	.05½	.06
U. S. Motor Gasoline, 53-55, 437 e.p.	.07	.07½	.07	.07½	.07	.07½

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (January 11)* ..... .80
Other fields ..... See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan* ..... Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler and Glasscock (July 26)‡ ..... $ .65
Chalk† ..... .65
Mitchell† ..... .65

*Includes Howard County and Westbrook Fields.
†Magnolia Petroleum Co., January 26, 1929.
‡Posted by Humble Oil & Refining Co., Magnolia Petroleum Co., and Gulf Pipe Line Co.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (Below 36 gravity April 11) ..... $ .75
Bellevue 1.20
Urania (Oct. 16, 1928) ..... .90
East El Dorado (March 16, 1927) 1.00
Other fields ..... See gravity table

Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co., and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co., Gulf Refining Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, Sugarland, Raccoon Bend, High Island, Pierce Junction and Spindletop.)

Grade A (March 14)* $1.20
Grade B ..... See gravity table
Jennings, La. (March 14)† $1.05
Saratoga, Batson, Daytona (March 14, 1927)‡ 1.20
Markham (March 14)§ 1.00
High Island (December 14)§ 1.00

*Humble Oil & Refining Co. and other major buyers. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Company.
†Posted by Gulf Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.
(Effective January 25, 1929)

Rock Creek, Wyo. $1.18
Salt Creek ..... See gravity table
Big Muddy 1.28
Grass Creek, heavy (July 27, 1928) .... .90
Grass Creek, light 1.36
Mule Creek (May 1, 1928) 1.10
Elk Basin 1.36
Lance Creek 1.38
Poison Spider (March 14, 1927) 1.00
Notches (March 14, 1927) ..... .65
Rex Lake (February 22) 1.10
Osage 1.38
Lost Soldier (contract) 1.00
Hamilton Dome (March 14, 1927) ..... .85
Greybull 1.57
Cat Creek (Montana) (July 27, 1928).. 1.48
Sunburst (Montana) (May 18, 1928) .. 1.65
Torchlight 1.38
Artesia (July 27, 1928) 1.08
Hogback (New Mexico) (July 27, 1928) 1.43

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTH-WESTERN TEXAS

Luling (January 11)* ..... $ .80
Mirando (January 7)† ..... .80
Rockdale-Minerva (April 15):
Below 28 gravity 1.25
28-38.9 gravity 1.27
39-39.9 gravity 1.29
40 and above 1.31
Thrall‡ ....
Callihan (May 15) 1.75
Lytton Springs (Lockhart) See gravity table
Somerset ..... See gravity table

*Posted by Magnolia Petroleum Co.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.
‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight.

EASTERN STATES

(Effective January 4, 1929)

Penna Grade Oil in New York Transit Lines (New York) $4.10
Bradford District Oil in National Transit Lines (Pennsylvania) 4.10
Penna Grade Oil in National Transit Lines (Pennsylvania) 4.00
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia) 4.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania) 3.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) 3.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (March 12)... 1.45
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (January 25, 1929) 1.65
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s Lines (January 25, 1929) 1.75
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (March 12, 1929).. 1.50
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29) .. .50

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective January 25, 1929)

Lima $1.50
Wooster 1.62
Illinois 1.45
Indiana 1.37
Princeton 1.45

(Continued on Page 144)

CRUDE OIL GRAVITY TABLE

Gravity—	Okla., Kans., N. C. Tex. 1	No. La. and Arkansas 2	Smackover, Ark. 3	Stephens, Ark. 4	Wheeler (Texas Panhandle) 5	Gray County (Texas Panhandle) 6	Carson and Hutchinson (Texas Panhandle) 7	Salt Creek, Wyo. 8	Grade B & Light Crude (G. Coast) 9	Somerset (South Central Texas) 10
24 and above	....	....	.90	....	....	....	....	....	....	....
Below 24	....	....	.75	....	....	....	....	....	....	....
Below 25	.60	....	....	....	....	....	....	....	1.05	....
25 to 25.9	.66	....	....	....	....	....	....	....	1.07	....
Below 26	....	....	....	....	....	....	....	....	....	....
26 to 26.9	.72	....	....	....	....	....	....	....	1.09	....
27 to 27.9	.78	....	....	....	....	....	....	....	1.11	....
Below 28	....	.78	....	.70	.70	.69	.72	....	....	....
28 to 28.9	.84	.84	....	.74	.70	.69	.72	....	1.13	....
29 to 29.9	.90	.90	....	.78	.70	.75	.72	.90	1.15	....
30 to 30.9	.96	.96	....	.82	.76	.81	.72	.96	1.17	....
31 to 31.9	1.02	1.02	....	.86	.82	.87	.72	1.02	1.19	....
32 to 32.9	1.08	1.08	....	.90	.88	.93	.78	1.08	1.21	1.05
33 to 33.9	1.11	1.13	....	....	.91	.96	.81	1.11	1.23	1.07
34 to 34.9	1.14	1.14	....	....	.94	.99	.84	1.14	1.25	1.09
35 to 35.9	1.17	1.17	....	....	.97	1.02	.87	1.17	1.27	1.11
36 to 36.9	1.20	1.20	....	....	1.00	1.05	.90	1.20	....	1.13
37 to 37.9	1.23	1.23	....	....	1.03	1.08	.93	1.23	....	1.15
38 to 38.9	1.26	1.26	....	....	1.06	1.11	.96	....	....	1.17
39 to 39.9	1.29	1.29	....	....	1.09	1.14	.99	....	....	....
40 to 40.9	1.32	1.32	....	....	1.12	1.17	1.02	....	....	....
41 to 41.9	1.35	1.35	....	....	1.15	1.20	1.05	....	....	....
42 to 42.9	1.38	1.38	....	....	1.18	1.23	1.08	....	....	....
43 to 43.9	1.41	1.41	....	....	1.21	1.26	1.11	....	....	....
44 and above	1.44	1.44	....	....	1.24	1.29	1.14	....	....	....

Column 1, Note—Magnolia Petroleum Co. posted schedule January 24, 1929, making price below 26 gravity 60 cents per barrel, 26-26.9 gravity 65 cents, 27-27.9 gravity 70 cents, 28-28.9 gravity 75 cents, 29-29.9 gravity 80 cents, 30-30.9 gravity 90 cents and 31-31.9 gravity $1, with balance of the price schedule as shown.

Oklahoma—Humble Oil & Refining and Carter Oil Co. January 24, Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., The Texas Company, January 25.

North Central Texas—Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas, Iatan and Panola, Iatan posted a flat price of 93 cents by Magnolia on January 14, 1928), Currie, Nocona and Moran. Prairie, Sinclair and Gulf, The Texas Company, January 25, Humble Oil & Refining Co., January 24.

Kansas—Prairie, Sinclair and The Texas Company, January 25; Carter, January 24.

Column 2—Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer and El Dorado only], Standard Oil Co. of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co., Magnolia Petroleum Co., schedule effective January 26 applies to Pine Island, Haynesville, Bull Bayou, Louisiana, and El Dorado, Ark., light crude. The Texas Company January 24 posted prices below 28 gravity at 6 cents differential per degree with minimum of 60 cents for all below 24 gravity.

Column 3—February 6, Louisiana Oil Refining Corp.: February 7, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co., and on February 10, Atlantic Oil Producing Co.

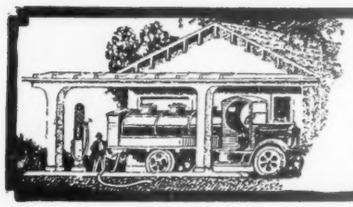
Column 4—Atlantic Oil Producing Co., Louisiana Oil Refining Corp., January 28.

Column 5, 6 and 7—Humble Oil & Refining Co., Magnolia Petroleum Co., January 24, 1929.

Column 8—Midwest Refining Co., January 25, 1929. All crude over 37 gravity $1.23 per barrel.

Column 9—Humble Oil & Refining Co. and other major buyers January 26 (schedule ends 35 and above), with exception of Magnolia Petroleum Co., which stops at 31 degrees gravity. Sun Pipe Line Co. and The Texas Company posted 2 cents differential for each degree above 35 gravity and 1.37 for 40 gravity and above.

Column 10—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns March 19.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Chicago dist.†	14.0	15.0	...	12.0
Decatur, Ill.	14.2	15.2	...	12.1
E. St. Louis	13.4	14.4	...	11.2
Joliet	14.4	15.4	...	12.3
Peoria	14.2	14.0	...	12.1
Quincy	14.2	15.2	...	11.9
Davenport, Ia.	17.5	18.5	3.0	12.3
Des Moines	17.5	18.5	3.0	12.3
Keokuk	17.5	18.5	3.0	13.3
Sioux City	17.1	18.1	3.0	11.9
Duluth, Minn.	17.5	18.5	2.0	12.9
Mankato	17.1	18.1	2.0	12.7
Minneapolis	17.2	18.2	2.0	12.9
La Crosse, Wis.	17.2	18.2	2.0	13.0
Milwaukee	16.1	17.1	2.0	11.9
Madison	16.3	17.3	2.0	12.1
Detroit, Mich.	17.8	18.8	3.0	13.7
Grand Rapids	17.7	18.7	3.0	13.6
Saginaw	17.9	18.9	3.0	13.8
Evansville, Ind.	17.0	18.0	3.0	13.0
Fort Wayne	17.4	18.4	3.0	13.4
Indianapolis	17.2	18.2	3.0	13.2
South Bend	17.4	18.4	3.0	13.4
Fargo, N. D.	18.9	19.9	2.0	14.9
Huron, S. D.	19.3	20.3	4.0	13.7
Sioux Falls	18.1	19.1	4.0	13.4
K. C., Mo.*	16.9	17.9	3.0	10.6
Springfield*	16.8	17.8	3.0	11.5
St. Louis*	15.9	16.9	2.5	11.3
St. Joseph	16.5	17.5	3.0	11.2
Wichita, Kans.	14.8	15.8	2.0	10.8
Bartlesville, Ok.	15.5	16.5	3.0	10.5

*State tax 2 cents; remainder city tax.
†Effective February 20, discounts on Q.D.A. in Chicago district 2 cents off service station price on purchases of 500 gallons or more per month and 4 cents on purchases of 1,000 gallons or more per month.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	11.9
V. M. & P. naphtha	16.2	12.9
Cleaner's naphtha	18.0	13.9
Stanisol	19.0	14.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting. Effective January 5.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 799 gallons	8.0
800 or more gallons	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline: 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month, and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	15.0	*20.0	...	14.0
Philadelphia	15.0	*20.0	...	14.0
Scranton	15.0	*20.0	...	14.0
Allentown	15.0	*20.0	...	14.0
Altoona	15.0	*20.0	...	14.0
Erie	15.0	19.0	...	14.(
Dover, Del.	18.0	20.0	3.0	14.0
Wilmington	18.0	20.0	3.0	14.0
Springf'd, Mass.	18.0	20.0	2.0	15.0
Worcester	18.0	20.0	2.0	15.0
Boston	18.0	20.0	2.0	15.0
Providence, R.I.	18.0	20.0	2.0	15.0
Hartford, Conn.	18.0	20.0	2.0	14.0
New Haven	18.0	20.0	2.0	15.0

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the state.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Omaha	16.25	18.25	2.0	12.25
McCook	17.75	19.75	2.0	13.75
Norfolk	16.75	18.75	2.0	12.75
N. Platte	17.75	19.75	2.0	13.50
Scottsbluff	17.75	19.75	2.0	13.25

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
N. Orleans, La.*	15.5	19.5	5.0	16.0
Baton Rouge	14.0	18.0	4.0	14.5
Alexandria	15.0	19.0	4.0	16.0
Lafayette†	16.0	20.0	5.0	14.0
Lake Charles	15.5	19.5	4.0	16.0
Shreveport	15.0	19.0	4.0	15.0
Knoxv'le, Tenn.	20.0	24.0	5.0	16.0
Memphis	18.0	22.0	5.0	12.5
Chattanooga	19.5	23.5	5.0	16.0
Nashville	19.0	23.0	5.0	16.0
Bristol	20.0	23.0	5.0	14.0
Lit. Rock, Ark.	17.0	21.0	5.0	13.0

*Tax of 5 cents includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax. †Five-cent tax includes 1-cent tax in Lafayette Parish.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	21.0	23.0	4.0	16.5
Augusta	21.0	23.0	4.0	15.5
Macon	21.0	22.0	4.0	16.5
Savannah	20.0	22.0	4.0	15.5
Birm'ham, Ala.	18.0	20.0	4.0	13.0
Mobile	21.0	23.0	4.0	15.0
Montgomery	22.0	24.0	4.0	16.5
Clarks'le, Miss.	21.0	23.0	5.0	13.0
Jackson	20.0	22.0	5.0	13.0
Natchez	20.5	22.5	5.0	14.0
Gulfport	22.5	24.5	5.0	14.0
Vicksburg	20.5	22.5	5.0	14.0
Jack'ville, Fla.	22.0	24.0	5.0	14.5
Miami	23.0	25.0	5.0	15.5
Pensacola	23.0	25.0	5.0	14.5
Tampa	22.0	24.0	5.0	14.5
Lexington, Ky.	20.0	22.0	5.0	15.5
Covington	20.0	21.0	5.0	15.5
Louisville	20.0	22.0	5.0	15.0
Ashland	21.0	23.0	5.0	15.5
Catlettsburg	21.0	23.0	5.0	15.5

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. Pensacola and Mobile taxes include 1-cent city levy. Gulf port tax includes privilege tax of 2 cents in addition to state tax.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	16.0	18.0	...	15.0
New York*	16.0	18.0	...	15.0
Buffalo	16.0	18.0	...	14.0
Rochester	16.0	18.0	...	14.0
Syracuse	16.0	18.0	...	15.0
Boston, Mass.	18.0	20.0	2.0	15.0
Augusta, Me.	20.0	22.0	4.0	15.0
Manch't'r, N.H.	20.0	22.0	4.0	15.0
Burlington, Vt.	19.0	20.0	4.0	15.0

*Prices in steel barrels.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlantic City	16.0	20.0	2.0	13.0
Newark, N. J.	16.0	20.0	2.0	13.0
Annapolis, Md.	18.0	22.0	4.0	13.0
Baltimore	18.0	22.0	4.0	12.0
Cumberland	18.0	22.0	4.0	13.0
Washington	16.0	20.0	2.0	12.0
Danville, Va.	19.0	23.0	5.0	13.0
Norfolk	19.0	23.0	5.0	13.0
Petersburg	19.0	23.0	5.0	13.0
Roanoke	19.0	23.0	5.0	13.0
Richmond	19.0	23.0	5.0	13.0
Ch'rist'n, W.Va.	18.0	22.0	4.0	13.0
Keyser	18.0	22.0	4.0	13.0
Parkersburg	18.0	22.0	4.0	13.0
Wheeling	18.0	22.0	4.0	13.0
Charlotte, N. C.	18.0	22.0	4.0	13.0
Hickory	18.0	22.0	4.0	13.0
Mt. Airy	18.0	22.0	4.0	13.0
Salisbury	18.0	20.0	4.0	13.0
Ch'lston, S. C.	9.0	23.0	5.0	13.0
Columbia	19.0	23.0	5.0	13.0

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
All Ohio points	17.0	18.0	3.0	12.0

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	16.0	20.0	2.0	12.0
Fort Worth	13.0	16.0	2.0	12.0
Houston	16.0	20.0	2.0	13.0
San Antonio	13.0	17.0	2.0	11.0
El Paso	17.0	20.0	2.0	16.0
Texarkana	16.0	20.0	2.0	13.0
Muskogee, Ok.*	15.0	17.0	3.0	12.0
Okla. City*	16.0	18.0	3.0	12.0
Tulsa*	17.0	19.0	3.0	10.0
Ft. Smith, Ark.	15.0	19.0	5.0	13.0
Little Rock	17.0	21.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Denver, Colo.	14.0	16.0	3.0	14.5
Pueblo	17.0	20.0	3.0	14.5
Grand Junction	21.5	24.5	3.0	18.0
Casper, Wyo.	18.0	21.0	3.0	13.0
Cheyenne	19.0	22.0	3.0	14.5
Butte, Mont.	22.5	25.5	3.0	19.0
Helena	22.5	25.5	3.0	19.0
Salt Lake, Utah	21.0	24.0	3.5	17.0
Albu'que, N. M.	22.0	25.0	5.0	17.0
Boise, Idaho	21.5	24.5	4.0	19.0
Twin Falls	23.5	26.5	4.0	19.0

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
San Francisco	19.0	19.0	3.0	15.5
Los Angeles	18.5	18.5	3.0	15.5
Reno, Nev.	22.0	26.0	4.0	19.0
Portland, Ore.	15.5	19.5	3.0	16.5
Seattle, Wash.	14.5	18.5	2.0	16.5
Tacoma	14.5	18.5	2.0	16.5
Spokane	18.5	22.5	2.0	20.5
Phoenix, Ariz.	18.0	22.0	4.0	20.5

TANK WAGON CHANGES

March 9—Standard Oil Co. of Louisiana reduced gasoline tank wagon prices 1 cent in Louisiana and Tennessee.

March 16—Standard Oil Co. of New Jersey reduced kerosene tank wagon price 1 cent at Baltimore and Washington. Gasoline service station prices reduced 2 cents at Salisbury, N. C.

March 18—Standard Oil Co. of California established a posted tank wagon price on gasoline of 19 cents at San Francisco and 18.5 cents at Los Angeles. Prior to dealers is 3 cents under these posted quotations. All quotations include tax. Similar adjustments are to be made at all points on Pacific Coast.

CRUDE OIL PRICE CHANGE

March 18—Standard Oil Co. of California posted a reduction of 24 cents on all Elwood Terrace crude making the price of 34 gravity crude at $1.16 with a 6-cent differential per degree to and including all oil at 43 gravity and above at $1.64.

CRUDE OIL PRICES

(Continued from Page 143)

Plymouth	L12
Waterloo (November 17, 1926)	L12
Western Kentucky (Sept. 17, 1928)	L12
Dundee, Mich. (Mar. 11, 1929)**	.6
Midland, Mich. January 15, 1929)*	L79
Saginaw, Mich., Saginaw Sand (February 10)†	L80
Saginaw, Mich., Berea Sand (February 10)†	L79
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 16)‡	L80
Oil in line in Stoll Oil Refining Co. in Oil City, Ky. (Feb. 16, 1929)§	L80
Oil Springs (Canada)¶	L87
Petrolia (Canada)¶	L80

*Posted by Pure Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.
**Posted by Standard of Indiana.

MEXICAN CRUDE

Panuco heavy (f.o.b. Mexican ports)	$1.11

Note—Due to the fact that the exportation of Tuxpan light crude has become a negligible factor, prices will no longer be published.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective January 18, 1929)

Gravity	1 Salt Lake, Potrero, Newport, Long Beach, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Alamitos Heights, Signal Hill, Seal Beach, Huntington Beach, Athens, Inglewood, Rosecrans-Dominguez, Watsonville	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset Elk Hills, Lost Hills, Bairdige, Buena Vista Hills	4 Montebello	5 aSanta Fe Springs	Santa Maria, Coalinga	Wheeler Ridge, aFruitvale	aOrcutt	8 Ventura, Rincon, Ventura Ave.	9 Elwood Terrace	10
14 to 14.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....	
15 to 15.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....	
16 to 16.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....	
17 to 17.9	.70	.70	.50	.70	....	.50	.50	.65	.70	....	
18 to 18.9	.75	.75	.56	.70	....	.56	.56	.70	.75	....	
19 to 19.9	.80	.80	.62	.75	....	.62	.62	.70	.80	....	
20 to 20.9	.85	.84	.68	.80	....	.68	.68	.70	.85	....	
21 to 21.9	.89	.88	.74	.85	.89	.74	.74	.86	.86	....	
22 to 22.9	.93	.91	.80	.90	.92	.80	.80	.87	.87	....	
23 to 23.9	.97	.94	.85	.95	.95	.85	.85	.90	.90	....	
24 to 24.9	1.01	.97	.90	.98	.98	.88	.88	.94	.94	....	
25 to 25.9	1.05	1.00	.95	1.01	1.01	.91	.91	.98	.98	....	
26 to 26.9	1.09	1.04	1.00	1.04	1.04	.94	.94	1.02	1.02	....	
27 to 27.9	1.13	1.08	1.05	1.07	1.07	.98	.97	....	1.06	....	
28 to 28.9	1.17	1.12	1.10	1.10	1.10	1.02	....	....	1.10	....	
29 to 29.9	1.21	1.16	1.16	1.13	1.15	1.06	....	....	1.14	....	
30 to 30.9	1.25	1.20	1.23	1.16	1.20	1.10	....	....	1.18	....	
31 to 31.9	1.30	....	1.28	....	1.25	1.14	....	....	1.23	....	
32 to 32.9	1.35	....	1.34	....	1.30	1.18	....	....	1.28	....	
33 to 33.9	1.41	....	1.40	....	1.35	1.22	....	....	1.34	....	
34 to 34.9	1.47	....	1.46	....	1.40	1.26	....	....	1.40	1.16	
35 to 35.9	1.53	....	....	....	1.45	1.30	....	....	1.46	1.22	
36 to 36.9	1.59	....	....	....	1.50	....	....	....	1.52	1.28	
37 to 37.9	1.65	....	....	....	1.55	....	....	....	1.58	1.34	
38 to 38.9	1.71	....	....	....	1.60	....	....	....	1.64	1.40	
39 to 39.9	1.77	....	....	....	1.65	....	....	....	1.70	1.46	
40 to 40.9	1.83	....	....	....	....	....	....	....	1.76	1.52	
41 to 41.9	1.89	....	....	....	....	....	....	....	1.82	1.58	
42 to 42.9	1.95	....	....	....	....	....	....	....	1.88	1.64	

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain 11 to 13.9 gravity 45 cents, 14 gravity and above 50 cents, effective October 2, 1929. On December 1, 1928, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 45 cents, 14 gravity and above 50 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights Crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity. Domingues and Athens-Rosecrans, 24 to 42.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 45 cents.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9 posted by Union Oil Co. only.

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THIS is the remarkable gasoline you should have in your car's engine this winter—because it gives superior cold weather performance. Fast starting! . . . on the coldest day. Smooth power! . . . without a sputter . . . even when the thermometer drops below zero!

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SINCLAIR AIRCRAFT GASOLINE

Starts **COLD ENGINES** *fast*

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Oil Securities in Upward Movement

Action at Houston Conference and Decrease in Daily Average Production Factors in Improvement. Advance Was General

The oil stocks experienced a general upward movement which was well sustained all through last week, and which held steady on Monday of this week. There were many quarters which predicted that the long expected market in the oils was about to materialize.

Indications that an improved economic situation was at hand in the petroleum industry reflected strength in almost all of the issues, both on the big board and on the curb.

The decrease in daily average oil production, together with the accomplishments of the meeting held by leaders of the industry at Houston last week, were considered evidence that genuine conservation methods were being practiced in the industry.

Standard of California

Report of Standard Oil Co. of California, for year ended December 31, 1928, shows net income of $46,083,817 after depreciation, depletion, federal taxes, etc., equivalent to $3.66 a share earned on 12,594,098 no-par shares of stock. This compares with $40,210,952 or $3.19 a share in 1927.

Consolidated income account for year 1928 compares as follows:

	1928	1927
Operating income	$66,026,086	$61,488,544
Other income	3,607,992	2,075,774
Total income	$69,634,078	$63,564,318
Depr., depl., etc.	19,996,261	20,053,366
Federal taxes	3,554,000	3,300,000
Net profit	$46,083,817	$40,210,952
Dividends	37,782,294	33,059,507
Surplus	$8,301,523	$7,151,445

Ohio Oil

Ohio Oil Co. reports for year ended December 31, 1928, net income of $5,054,955 after taxes and reserves, equivalent to $2.10 a share (par $25) earned on 2,400,000 shares of stock. This compares with $3,510,372 or $1.46 a share in 1927. The 1927 figures are exclusive of $2,000,000 excess tax reserve for 1926 not required and credit of $1,804,199 tax adjustment with the Government, both of which items were credited to profit and loss account.

Consolidated income account for year 1928 compares as follows:

	1928	1927
Net earn.	$5,407,610	.....
Federal taxes	352,655	.....
Net income	$5,054,955	$3,510,372
Dividends	4,786,630	7,865,119
Surplus	$268,325	*$4,354,747

*Deficit.

Vacuum Oil

Report of Vacuum Oil Co. for year ended December 31, 1928, shows net profit of $37,659,458 after inventory, depreciation, reserve for federal taxes, etc., equivalent to $7.46 a share (par $25) earned on 5,047,214 shares of stock. This compares with $25,559,899 or $10.17 a share on 2,512,382 shares in 1927.

Income account for 1928 compares as follows:

	1928	1927
Gross prof.	$39,672,908	$29,173,624
Inven. depr.	763,450	2,613,725
Fed. tax. res.	1,250,000	1,000,000
Net prof.	$37,659,458	$25,559,899
Dividends	18,917,602	12,542,460
Surplus	$18,741,856	$13,017,439

Columbian Carbon

Report of Columbian Carbon Co. and subsidiaries for year ended December 31, 1928, shows net profit of $2,991,362 after depreciation, depletion, Federal taxes, etc., equivalent to $6.76 a share earned on 442,344 no-par shares of stock. This compares with $2,032,962 or $5.05 a share on 402,131 shares in 1927.

Sun Oil Co.

Statement of Sun Oil Co. and subsidiaries as of December 31, 1928, shows total assets of $74,500,081 compared with $65,748,291 at end of 1927, and surplus $6,498,158 against $3,789,096. Current assets totaled $22,452,510 and current liabilities $7,143,161 as contrasted with $20,407,028 and $6,097,563, respectively, at close of previous year.

Consolidated balance sheet of Sun Oil Co. and subsidiaries as of December 31, 1928, compares as follows:

	1928	1927
Assets		
*R E leases, plant equipment	$45,491,675	$36,885,522
Cash	2,196,105	2,957,780
Accts. and bills rec.	4,899,913	4,013,518
Due from emp.	153,169	.....
Inventories	14,446,447	12,793,552
Mark. securities	756,877	642,178
‡Investments	4,684,707	6,427,060
Def. charges	1,871,188	2,028,681
Total	$74,500,081	$65,748,291
Liabilities		
Prefered stock	$5,000,000	$5,000,000
Common stock	$44,033,667	40,461,739
Minority interest	8,105	8,544
Funded debt	8,992,000	9,662,000
Accrued dividends	25,000	25,000
Accts., bills payable	6,178,422	5,154,214
Federal tax	451,832	.....
Cont. res.	487,356	99,281
Other reserves	1,860,800	.....
Accrued tax and inst.	835,048	943,349
Other current liab.	129,693	.....
Loans, affil. cos.	.....	605,068
Surplus	6,498,158	3,789,096
Total	$74,500,081	$65,748,291

*After depreciation, depletion and amortization. †Represented by 1,297,627 no-par shares. ‡Of affiliated and nonaffiliated companies.

National Fuel Gas

National Fuel Gas Co. declared regular quarterly dividend of 25 cents, payable April 15 to stock of record April 30.

Cities Service

Capital plans of Cities Service Co. involve issuance of $50,000,000 of 5 per cent debentures, which will carry nondetachable warrants for purchase of common stock. Proposed new financing, which is for refunding purposes, will give the company the following outstanding capitalization: Common stock (par $20) 5,061,636 shares; $6 preferred stock (no par) 1,034,951 shares; 60-cent preference B stock (no par) $296,660 shares; $6 preference BB stock (no par) 63,053 shares; 5 per cent debentures, due 1958, 1963 and 1966, $90,317,600, and 5 per cent gold debentures, due 1969, $50,000,000.

Subsidiary companies have funded debt and preferred stocks (par or state value) of $327,651,469, and minority common stocks (par or stated value) of $6,297,003.

Imperial Oil, Ltd.

Report of Imperial Oil, Ltd., and affiliated companies for year ended December 31, 1928, shows net profit of $22,963,264 after Federal taxes, etc., equivalent to $3.47 a share earned on 6,606,442 no-par shares of common stock.

Consolidated income account for year 1928, follows: Operating profit, $20,136,

OIL BONDS ON THE NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members New York Stock Exchange, Kennedy Bldg., Tulsa, Okla.

Amount outstanding	Company—	Date	Pct.	Int.	For week ended Mar. 15— Sales	High	Low	Close
.....	Atlantic Refining Co.	July 1937	5	J&J	5,000	102	102	102
18,864,500	Barnsdall Oil with war.	Dec. 1940	6	J&D	No sales.			
6,000,000	Barnsdall Oil without war. .	Dec. 1940	6	J&D	No sales.			
11,400,000	California Pet. conv. deb. ..	Nov. 1938	5½	M&N	3,000	101⅞	100½	101⅜
7,400,000	California Pet. conv. deb. ..	Feb. 1939	5	F&A	7,000	98½	98	98⅜
.....	General Petroleum	Aug. 1940	5	F&A	No sales.			
25,000,000	Humble O. & R. deb.	July 1932	5½	J&J	8,900	101½	101	101
24,239,000	Humble O. & R. deb.	Apr. 1937	5	A&O	3,500	100	99⅞	100
10,103,000	Mid-Cont. Pet. Corp.	Mar. 1940	6½	M&S	No sales.			
3,745,000	Pan-American Pet. & T.	Aug. 1930	7	F&A	800	104¾	104⅜	104⅜
10,161,900	Pan-American Pet. & T.	Nov. 1934	6	M&N	2,900	102¾	102½	102⅝
40,000,000	Phillips Pet.	June 1939	5½	J&D	5,000	90¼	89½	90⅛
.....	Pierce Oil deb.	June 1931	8	J&D	No sales.			
.....	P. & R. Corp. without war. ..	June 1931	8	J&D	No sales.			
.....	Producers & Refiners Corp. .	June 1931	8	J&D	100	110¾	110⅜	110⅜
20,000,000	Sure Oil	Aug. 1937	5½	F&A	No sales.			
30,000,000	Shell Pipe Line Co.	Nov. 1952	5	M&N	4,500	98	97	97
50,000,000	Shell Union Oil Co.	May 1947	5	M&N	6,600	94⅞	97	94⅞
3,431,500	Simms Pet. Co.	Nov. 1929	6	M&N	7,100	96½	95½	95⅝
44,816,500	Sinclair Co. Oil Co. A	Mar. 1937	7	M&S	No sales.			
23,086,500	Sinclair Co. Oil Co. B	Mar. 1938	6½	J&D	4,300	102½	102	102⅜
20,000,000	Sinclair Co. Oil Co. D	Sept. 1930	6	M&S	17,500	100	99⅜	100
.....	Sinclair Cr. Oil Pur. Co. A ..	Jan. 1938	5½	J&J	4,600	99¼	98⅞	99⅛
.....	Sinclair Pipe Line Co.	Oct. 1942	5	A&O	2,900	96	95	96
15,000,000	Skelly Oil Co.	Mar. 1939	5½	M&S	12,300	94	93⅜	94
.....	Standard Oil of N. J.	Dec. 1946	5	F&A	700	93½	93	93
.....	Standard Oil of N. Y.	Dec. 1951	4½	J&D	2,700	102½	102	102⅛
.....	Superior Oil Co.	Feb. 1929	7	F&A	4,500	96¼	95⅜	96⅛
.....	Union Oil of Calif.	Jan. 1931	5	J&J	No sales.			
8,934,500	Union Oil of Cal. 20 yr. A ..	May 1942	6	F&A	400	101⅝	101⅜	101⅜
9,419,000	Union Oil of Cal. series C ..	Feb. 1935	5	A&O	No sales.			
4,870,000	White Eagle Oil & Ref.	Mar. 1937	5½	M&S	800	98¼	98	98¼
					7,000	102	101⅝	102

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Kennedy Building, Tulsa, Okla.

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low	Par value	Stocks	Week ended March 15 Sales	Open	High	Low	Last	Change
$6.75	.45	2⅛	.55	1½	.53	$5	Amer. Con. Oilfields	3,200	58	59	55	56	— 3
..	..	7½	2¾	9½	3⅛	N.P.	Amer. Maracaibo	8,400	5¾	5¾	5⅜	5½	— ⅛
..	..	2¾	1	4½	2¼	$10	Argo Oil	1,600	2½	2½	2¼	2½	+ ⅛
85¼	60	40	20½	55	32¾	N.P.	British American	No sales.					
28⅜	9¼	28¼	15½	4½	3⅞	25c	Carib. Syndicate (new)	2,600	3	3½	2⅞	3½	+ ½
..	..	58¾	40¼	90⅞	54	$20	Cities Service	84,400	120½	121⅞	119½	120½	— ½
..	..	95⅜	87	103½	94½	100	Cities Service, pfd.	2,000	97⅛	97½	97	97½	— ⅛
..	..	87⅜	7⅜	9⅝	8⅞	10	Cities Service, pfd. B	400	9	9¼	9	9	.....
3½	1¾	3⅞	1⅛	3¼	76	1	Colombia Syndicate	3,800	1¼	1⅜	1¼	1¼	+ ⅛
..	..	9¾	6⅜	8⅞	6¼	10	Consolidated Royal	2,800	9	9¾	8½	8⅝	— ⅜
16	10	14⅞	9½	17½	9½	N.P.	Creole Syndicate	18,400	9⅛	9½	8⅝	9⅜	+ ⅛
..	..	3	.50	3¼	.76	N.P.	Crown Central	3,500	1½	1¾	1⅜	1⅝	+ ⅛
7⅞	6¾	12	4	33½	3¼	N.P.	Darby Petroleum	1,800	21	21⅞	20½	20¾	— ⅛
..	..	2½	74	2¼	1	N.P.	Derby Oil & Refining	8,400	3¼	4⅝	3¼	4	+ ⅛
..	..	16¾	4	21⅛	7½	N.P.	Derby Oil & Refining, pfd.	200	24⅞	24⅞	24	24	.....
..	..	2	.40	.53	.15	N.P.	Gilliland ctfs.	No sales.					
98	92	118	86¼	165	101⅛	$25	Gulf Oil Corp.	18,200	149⅞	151⅞	157	151⅜	+ 1⅛
$3.00	.83	2½	.80	3⅜	1	5	Intercontinental Pet.	9,700	1⅞	1⅞	1¾	1¾	.....
..	..	2¼	1⅛	3	1¼	N.P.	Kirby Petroleum	5,600	1⅞	2½	1¾	2⅜	+ ⅜
12¼	5¾	10⅞	5⅛	9⅜	5⅛	25	Leonard Oil & Dev.	7,800	5	6	5⅛	5¾	+ ⅝
27	20	27½	20	43⅞	20	N.P.	Lion Oil & Refining	800	26½	26	25⅛	25⅛	— ⅜
46	30	59⅜	37	69⅛	48⅛	$25	Lone Star Gas	700	72¼	72¼	71½	71½	+ ⅜
2⅞	1	2⅞	.80	1⅞	.50	1	Magdalena Syndicate	3,900	76	70	65	65	— 5
34	12½	52	12	48½	32	N.P.	Margay Oil	100	31	31	31	31	.....
8	5½	12⅛	5	8	2¾	N.P.	Mexico-Ohio Oil	1,400	5	6⅜	5	6⅜	+ 1¼
1¾	1⅛	1½	1	1¾	.76	$1	Mountain & Gulf	2,800	1¼	1⅜	1⅛	1⅜	+ ⅛
26	23	29¼	22¾	28⅞	19½	10	Mountain Producers	3,700	20¾	21¼	20⅝	20⅞	— ⅛
6⅝	5	5⅞	4⅝	5⅝	4¼	5	New Bradford	1,700	4¼	4⅜	4	4¼	— ⅛
..	..	16	9¼	11⅞	7⅛	1	New Mex. & Ariz.	4,500	7½	9⅜	7½	8½	+ ⅛
..	..	12¾	9½	14¼	8½	N.P.	North Central Texas	No sales.					
10⅛	5⅞	9⅜	3¼	6	2⅛	N.P.	Pandem	39,000	2¾	3½	2¾	3¼	+ ⅜
12¼	11¾	12⅛	7	15⅝	8½	N.P.	Pantepec Oil	3,400	8¾	8¾	8	8⅜	+ ⅛
22¾	12	13½	5⅛	7¾	4⅞	N.P.	Pennok Oil	500	4⅞	4⅞	4⅞	4⅞	+ ½
17	8½	24⅜	7	18	4⅞	25	Red Bank Oil	No sales.					
30¼	12	15½	3½	12⅞	4⅛	N.P.	Reiter-Foster	2,800	6⅛	6¼	5⅝	6¼	+ ⅛
7	4½	7	4½	12	4⅛	N.P.	Ryan Consolidated	700	7¾	8¼	7¾	7¾	— ⅛
10	7⅛	8	5¼	7¼	5½	$10	Salt Creek Cons.	1,200	5	5	4¼	4¼	— ⅝
35	24⅛	35½	27¼	35	23⅛	10	Salt Creek Prod.	4,000	24⅛	25	23⅛	23½	— ⅞
6⅞	1¼	7	1¼	3½	1	5	Savoy Oil	No sales.					
27	7⅝	26½	17	22⅞	13	10	Tidal Osage	200	11½	11½	11½	11½	+ ⅜
25¾	7⅝	23¾	15	21¼	13⅛	10	Tidal Osage, nonvoting	100	11¼	11¼	11¼	11¼	.....
92	63½	92	63½	93¾	75	100	Transcontinental, pfd.	No sales.					
8	4½	7⅜	4¼	9⅛	4¾	5	Venezuelan Petrol	2,200	4⅞	5	4¾	5	+ ⅛
8⅛	5½	8	4¾	8¼	4⅞	$1	Woodley Petroleum	2,200	8½	8¾	8⅛	8½	.....
6½	6	6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	1,000	3	3	3	3	+ ⅛

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of New York Stock Exchange, Kennedy Building, Tulsa, Okla.

1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low		Listed capital	Par value	Stocks—	Div. rate	Last paid	Week ended March 15 Sales	Week Open	High	Low	Last	Change
32⅞	24¼	37⅝	27⅝	43⅞	27⅛	(sh)	922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 28	11,200	31⅜	33½	20½	33¼	+ 2
74	39⅞	82⅛	35⅛	85	51¼	(sh)	209,180	N.P.	American Republics Corp.	.....	.....	7,400	49	56¾	49	56¾	+ 7¾
60	44⅜	50¼	35	53⅜	37½		$57,260,300	$25	Associated Oil	50cQ	Dec. 31, 28	290	43	43¼	43	43¼	+ ¾
128⅜	97	131⅜	104	66⅜	50		50,000,000	25	Atlantic Refining	25cQ	Dec. 15, 28	24,400	58	63½	57⅝	63½	+ 6
33½	23½	35½	20¾	53	20		35,194,000	25	Barnsdall Corp.	50cQ	Feb. 5, 29	169,400	41¾	45½	40¼	45½	+ 4½
94¼	50	96¾	65	94⅞	68		20,785,400	100	General Asphalt	.....	.....	7,200	66	69½	64¾	69	+ 3
72	50¼	175¾	60⅛	167	79		25,000,000	100	Houston Oil	.....	.....	5,800	84	93¾	81¼	92¼	+ 8¼
34	19⅝	32¾	17⅝	38⅜	21¾	(sh)	959,457	N.P.	Independent Oil & Gas	50cQ	Jan. 31, 29	37,900	31⅝	33	31	33	+ 1½
12¾	7½	12⅛	7⅝	39⅝	9		8,203,080	$10	Indian Refining	.....	May 31, 24	43,900	35¾	36½	33	34½	+ 2¼
25⅞	16½	37¾	20½	39⅛	27⅜	(sh)	3,992,122	N.P.	Lago Oil & Transport	.....	May 1, 27	1,800	30	30⅛	29	30	.....
19⅝	12	18⅛	10	19¾	9⅜	(sh)	1,237,078	N.P.	Louisiana Oil Refining	.....	.....	16,000	13¾	14¾	13⅝	14¾	+ ¾
28	16½	22¾	12	25½	12½	(sh)	330,000	N.P.	Maracaibo Oil	.....	.....	1,200	14¾	15½	14¾	15½	+ ¾
63⅜	49¼	58½	31	49¾	33	(sh)	2,316,692	N.P.	Marland Oil Co.	.....	Mar. 31, 27	65,600	38¼	41⅜	38¼	41⅜	+ 2
13¾	6	9¼	3	73	4⅝	(sh)	945,939	N.P.	Mexican Seaboard	.....	Dec. 15, 20	157,100	48	54⅜	46½	54	+ 5⅞
37	20½	39⅜	25½	44½	25⅛	(sh)	1,357,461	N.P.	Mid-Continent Petroleum	50eQ	Feb. 15, 29	44,300	31⅝	35	31½	35	+ 3¼
104¼	90	105	97	120½	103¼		$6,718,000	$100	Mid-Continent Petroleum pfd.	$1.75Q	Sept. 1, 28	No sales.					
2½	½	3¾	1⅝	7⅜	2⅜		24,298,850	10	Middle States	.....	July 1, 23	22,000	3¾	4⅜	3¾	4⅜	+ ⅜
76½	56⅛	65⅞	40⅛	54⅞	38¼		$48,807,400	$50	Pan American P. & T.	.....	Oct. 20, 27	4,200	43¼	45½	43	45	+ 2
78⅜	56⅞	66⅜	40¼	58⅞	37¾		121,097,900	50	Pan American P. & T. B.	.....	Nov. 15, 24	51,200	45	46½	45	46½	+ 2½
46	30	37⅞	16¾	28⅜	15½	(sh)	400,000	N.P.	Pan American Western B	.....	Jan. 30, 27	200	15	15	15	15	+ ½
52	4½	18⅞	8	21¾	11½	(sh)	198,770	N.P.	Panhandle P. & R.	.....	.....	4,700	10	11⅜	9¾	11⅜	+ 1⅜
99⅜	51	83	54	108	70		$2,935,200	$100	Panhandle P. & R. pfd.	.....	July 2, 23	300	61¼	65	60⅝	65	+ 7¼
57⅜	40	60¼	36¼	53⅞	35¼	(sh)	2,406,796	N.P.	Phillips Petroleum	37½eQ	Jan. 2, 29	43,600	38⅛	41⅜	37⅞	41	+ 2⅞
....	....	1⅛	½	5¼	½		$29,622,925	$25	Pierce Oil Corp.	.....	.....	25,900	2 ⅜	3	2¼	3	+ ½
7	2¼	5½	2½	7	3½	(sh)	2,500,000	N.P.	Pierce Petroleum	.....	.....	9,200	4⅞	5	4⅞	5	+ ⅛
60¼	48	55½	45⅝	68	46		60,000,000	25	Prairie Oil & Gas	.....	Aug. 31, 27	17,800	58¾	61⅞	58⅛	61⅞	+ 3¼
137½	122½	190	130¾	280	172		$101,250,000	$25	Prairie Pipe	.....	.....	16,900	57	58	56⅛	57	+ ⅛
20¾	11	33⅞	16¾	29⅞	16		$37,450,850	$50	Producers & Refiners	.....	Sept. 15, 23	9,100	20	23½	19¾	22⅝	+ 2⅝
41⅜	30¾	50	36⅞	49⅝	41		2,845,350	50	Producers & Refiners pfd.	.....	May 1, 25	380	49	42	40	40¼	+ ¼
31	25¼	33½	25	31⅝	19		75,959,350	25	Pure Oil Co.	25cQ	Dec. 1, 28	14,500	24⅜	25½	24⅛	25½	+ ⅞
27½	22	28⅝	25⅜	56	23		47,025,000	$25	Richfield Oil	.....	Nov. 15, 28	67,100	41¾	45⅜	41	45¼	+ 3½
57⅜	47⅜	54½	44¼	64	44⅝	(sh)	611,303	13.40	Royal Dutch, N. Y. shares	50eQ	Jan. 10, 29	2,200	52⅜	52½	51½	52½	+ ⅜
48⅝	40½	47⅞	41⅜	57½	40⅝	(sh)	£30,000,000	£1	Shell Transport & T.	$1.455	July 23, 28	300	44	44	43⅞	44	— 2
31	24	31⅜	24⅝	39¼	23¼	(sh)	20,000,000	N.P.	Shell Union Oil	35cQ	Dec. 31, 28	57,800	26⅞	28¼	26 ¼	28½	+ 2
26⅝	15⅛	26⅜	14¼	27¼	18⅛		$8,357,000	$10	Simms Petroleum	10cQ	Dec. 15, 28	10,100	18¾	20¾	18⅝	20¾	+ 1¾
24⅞	16¾	22⅜	15	46¾	17⅜	(sh)	4,501,915	N.P.	Sinclair Consolidated	.....	.....	312,900	38½	41⅜	37½	41⅜	+ 3¾
99¼	90	104½	97	110	102½		$16,604,600	$100	Sinclair Consolidated pfd.	$2Q	Nov. 15, 28	300	109¾	110	109¾	109¾	.....
37⅛	26⅝	37⅜	24⅛	42⅝	25		27,396,590	25	Skelly Oil Co.	50eQ	Dec. 15, 28	5,100	34	35⅞	33⅜	35¾	+ 1⅝
63⅝	51½	60¾	50⅜	80	53	(sh)	12,594,098	N.P.	Standard Oil of California	65½eQ	Dec. 15, 28	89,100	67⅞	72⅜	66½	72	+ 3½
46⅜	37½	41⅜	35⅛	59⅜	37¾		$611,120,700	$25	Standard Oil of New Jersey	25cQ*	Dec. 15, 28	84,100	49⅝	54½	48½	54½	+ 5⅛
47¼	30⅜	34½	29¾	44¼	28¾		427,973,275	25	Standard Oil of New York	40cQ	Dec. 15, 28	81,100	39⅞	41¾	39¼	41¾	+ 1⅞
41⅝	30⅛	34⅞	30	77	31½	(sh)	1,206,073	N.P.	Sun Oil	25cQ	Dec. 15, 28	1,400	59⅜	62	59⅜	62	+ 3
5¼	1	6½	3⅛	14¼	2½	(sh)	1,267,000	N.P.	Superior Oil Corp.	.....	Dec. 20, 20	152,100	7⅝	9½	7¼	9½	+ 2
58	48	58	45	74¾	50		$211,076,650	$25	The Texas Corporation	75cQ	Jan. 1, 29	61,100	59⅜	64	58⅞	64	+ 4
19½	12	18⅞	12	26⅝	12⅛		8,380,340	10	Texas Pacific Coal & Oil	.....	Jan. 3, 28	15,100	20⅝	21⅜	20½	21	+ ¼
30¼	27	29⅛	19	41½	19⅝	(sh)	2,168,410	N.P.	Tide Water Oil Co.	20cQ	Dec. 15, 28	2,100	30	33½	29¼	33	+ 3¼
103	87¼	90½	85	100⅛	86		$20,705,200	$100	Tide Water Oil Co. 5% pfd.	$1.25Q	Nov. 15, 28	400	90¼	90⅜	90¼	90⅜	— ¼
27	20⅞	19⅛	15¾	25	14¾	(sh)	4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	27,700	18⅜	20	18⅜	20	+ 1½
5½	3	10⅜	3¾	14¾	7¼	(sh)	3,742,029	N.P.	Transcontinental Oil	.....	.....	40,500	9¾	10⅜	9⅜	10¼	+ ⅝
58⅝	37¼	56½	39⅝	58	42¾		$94,798,100	$25	Union Oil of California	50cQ	Nov. 10, 28	4,600	49¼	51¼	48⅞	51	+ 1¾
120⅝	84¼	127½	94	128⅛	110		31,061,200	100	Union Tank Car Co.	$1.25Q	Dec. 1, 28	2,000	141	146	140¼	141¾	— ¼
30⅛	23½	34½	24½	44⅞	26	(sh)	356,000	N.P.	Warner Quinlan	50cQ	Jan. 2, 29	18,900	35⅜	39¼	35⅜	39¼	+ 4⅛
29⅜	25⅛	27½	20	38	20⅛	(sh)	490,000	N.P.	White Eagle Oil & Refining	50eQ	Jan. 20, 29	7,200	36¼	37½	35⅜	37½	+ 1½
									Wilcox Oil & Gas	.....	.....	56,700	24¼	27	23¾	27	+ 2⅛

*Also extras.

STANDARD OIL STOCKS ON NEW YORK CURB

21	16	21⅝	17⅞	22⅜	14⅞		£4,126,460	£1	Anglo-American Oil	.....	June 6, 28	1,900	16⅛	17	16	17	— ¼
....	....	3¾	¾	5	1¼	(sh)	500,000	N.P.	Atlantic Lobos	.....	.....	400	2	2⅛	2	2⅛	.....
76	65	69	50	56½	44½		1,000,000	25	Borne Scrymser	$1S.A.	Oct. 15, 28	50	44	44	44	44	.....
50½	42	60	45	76	53		10,000,000	50	Buckeye Pipe Line	$1Q	Dec. 15, 28	400	68	69⅝	68½	69⅝	+ 1⅝
82⅛	65	126	76½	161	117½		3,000,000	25	Chesebrough Mfg.	$1Q	Dec. 28, 28	700	148	148	148	148	+ 6¼
25⅞	17½	22⅝	16¼	23	16		36,057,840	10	Continental Oil	.....	Dec. 15, 27	138,500	26⅞	27⅜	25½	26½	.....
137	102	137	89	114	67		1,500,000	50	Cumberland Pipe Line	$1A	Dec. 15, 28	No sales.					
63¾	43	68½	47	88	64⅛		5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 28	100	64½	64½	64	64	— ½
32½	9⅞	13½	3½	13	4¼		16,000,000	100	Galena Signal Oil	.....	June 30, 25	100	6⅝	6⅝	6⅝	6⅝	.....
68½	52	68½	54	114¾	59¼		73,117,577	25	Humble Oil & Refining	30cQ*	Jan. 1, 29	15,200	98¼	103¾	94½	103	+ 6⅜
144½	125½	182	123¾	290½	176½		20,000,000	100	Illinois Pipe Line	10c%S.A.	Dec. 15, 28	700	306	310	306	310	+ 4
....	....	64¾	37¾	104	56¾	(sh)	6,458,267	N.P.	Imperial of Canada	25cQ	Dec. 1, 28	9,300	92⅝	97¾	90¼	95⅛	+ 2¾
72½	58	94½	61	91⅞	74⅜		$5,000,000	$50	Indiana Pipe Line	$1Q	Feb. 15, 29	400	83	85	83	85	+ 2½
35½	28¾	39	28¼	55	35	(sh)	7,123,444	N.P.	International Petroleum	25c	Nov. 30, 28	7,200	53¼	56¼	52	55½	+ 1½
20¾	12½	24	13½	32⅜	19⅜		$6,363,350	12.50	National Transit Co.	25c	Dec. 15, 28	2,800	24	24¾	23⅝	24¾	+ ¾
51½	27¾	44½	31¼	75	38½		5,000,000	100	New York Transit	.....	July 15, 26	120	82	82	82	82	+ 2
80½	64	100	70	69	56½		2,000,000	50	Northern Pipe Line	$3S.A.	Jan. 2, 29	No sales.					
67¾	55⅝	67⅞	52	84	58½		60,000,000	25	Ohio Oil Co.	50cQ*	Dec. 15, 28	3,400	64⅜	69½	64⅝	69	+ 4⅜
24⅜	15	39	12	84	28		10,000,000	25	Penn Mex. Fuel	$1.25	Dec. 15, 28	1,200	31⅞	32	31⅛	31½	+ ⅝
220	84½	201½	175½	220	167		4,000,000	100	Solar Refining	$5S.A.	Dec. 20, 28	800	41¾	43	38¼	38¼	— 3½
74½	61½	27¼	15½	19	15		1,000,000	10	Southern Pipe Line	$2	Dec. 1, 27	1,600	14½	17½	14	17	+ 4⅝
50	34½	41½	35	71⅞	36¾		2,000,000	25	South Penn Oil	50cQ	Dec. 31, 28	2,300	42½	43⅝	41¾	43⅝	+ 1½
58	47⅛	83	55½	102	70		3,500,000	100	Southwest Pa. Pipe Lines	$1Q	Oct. 1, 28	100	67	67	67	67	— ½
70½	60½	81½	64⅝	95⅞	70⅞		228,415,463	25	Standard Oil of Indiana	62½eQ	Dec. 15, 28	23,400	87⅛	91½	87	90⅝	— 7⅜
36½	16½	20⅞	14⅝	27¾	15		8,000,000	25	Standard Oil of Kansas	.....	June 16, 24	1,800	21⅜	21⅞	20¼	20¼	— 1¼
134⅜	108	130	111½	179¾	122¼		17,012,559	10	Standard Oil of Kentucky	$1Q	Dec. 31, 28	6,400	39⅞	40⅝	39⅛	40⅝	+ ⅞
51⅛	42	49½	40	54⅞	39⅞		4,559,850	25	Standard Oil of Nebraska	63cQ	Dec. 20, 28	300	47	48	47	47½	+ 1
372	288	87½	72	134	71		14,000,000	25	Standard Oil of Ohio	62½eQ	Jan. 2, 29	350	114	115½	114	115	+ 1
21	15	21	14½	23½	16		861,000	25	Swan Finch Co.	.....	Nov. 1, 19	No sales.					
109⅝	90¼	....	....	111	72		125,619,000	25	Vacuum Oil	75cQ	Dec. 20, 28	7,800	121	128½	119⅛	128	+ 6½

*Also extras.

375; other income, $4,600,097; total income, $24,736,472; Federal taxes, $1,773,208; net profit, $22,963,264.

Beacon Oil

Report of Beacon Oil Co. and subsidiaries for year ended December 31, 1928, shows net income of $1,209,815 after depreciation, interest, federal taxes, etc., equivalent after preferred dividends, to $1.09 a share earned on 947,747 no-par shares of common stock. This compares with $345,476 or 18 cents a share on 915,391 shares in 1927.

Prudential Refining

Stockholders of Prudential Refining Corp. ratified sale of the assets to Marland Oil Co. for 110,000 shares of latter's common stock. On this basis, after the preferred stock of Prudential is converted into common in the ratio of six shares of common for each share of preferred, there will be distributed to Prudential stockholders one share of Marland for two shares of Prudential.

Pennok Oil

Report of Pennok Oil Corp. for year ended December 31, 1928, shows net loss of $29,791 after interest, abandoned wells and leases, depletion, depreciation, etc., against net loss of $6,371 in 1927.

Wilcox Oil & Gas

Consolidated balance sheet of H. F. Wilcox Oil & Gas Co. and subsidiary as of December 31, 1928, after giving effect as of that date to the sale of $2,000,000

(Continued on Page 154)

HEARING ON GASOLINE SPECIFICATIONS HELD

(Continued from Page 32)

finery and trade conditions leading to a surplus of lighter fractions.

Vapor Lock

"So-called "vapor lock" due to low distillation temperature of the lighter fractions in the motor fuel is becoming increasingly prevalent, and a specification must be drawn to protect government purchasers from this difficulty, from which the general public is in a measure protected by competition.

"The problem of vapor lock is basically one of vapor pressures, since bubbles of vapor cannot form in the fuel lines if the vapor pressure of the gasoline at the existing temperature is less than the external pressure. The following information on the vapor pressures of gasolines has been obtained by the bureau.

"The vapor pressure of any gasoline freed from water, ethane and air can be evaluated with accuracy at any temperature from the 10 degrees A. S. T. M. point.

"The solubility of air in a gasoline appears to be determined by the 10 per cent point.

"For practical purposes, the amount of ethane in commercial gasolines is very small and essentially constant.

"The effect of water on the vapor pressure is practically the same for all gasolines.

"From these, it appears that differences in vapor pressures of gasolines are related to differences in the 10 per cent A. S. T. M. points. Hence a minimum 10 per cent point specification should furnish a safeguard against vapor lock under normal conditions of operation. The proposed minimum temperatures are based on actual cases of vapor lock with fuels of known 10 per cent points, on confidential information from the petroleum and automotive industries and on the research work of the Natural Gasoline Association of America, who are extremely interested in the problem. At the last annual meeting of that association, their Director of Research, Prof. G. G. Brown, summarized the results of an extensive piece of work on vapor lock with motor fuels. The following extracts are taken from Professor Brown's report.

" 'Careful study of the results so far obtained indicates that the gas-free vapor pressure is the best single indication of the tendency of a fuel to vapor lock.' • • 'With a few exceptions the maximum temperature reached by the gasoline in the carburetor will not exceed 140 degrees Fahrenhite in those cars equipped with thermostically controlled shutters, or in other cases a temperature of about 50 degrees Fahrenhite above atmospheric temperature.' • • 'Although these results must not be regarded as conclusive, the discrepancies in these data are more apparent than real, and careful considerations of the conditions under which these tests were made lead to the conclusion that if the vapor pressure of the gas free fuel or gasoline as it exists in the passages of the carburetor does not exceed atmospheric pressures at that temperature existing in the carburetor, the fuel will not cause vapor lock. Apparently the best available specification to insure that a fuel will not vapor lock, is that the fuel possesses a gas free vapor pressure not greater than atmospheric at the maximum temperature reached by the fuel in the carburetor.'

"Considering the relation found on the one hand by the bureau between the 10 per cent point and the gas free vapor pressure of a gasoline, and on the other hand by the Natural Gasoline Association between the gas free vapor pressure and the vapor locking tendency, it appears that a minimum 10 per cent point would serve to specify gasolines from the standpoint of vapor lock, and this conclusion is in accord with other information which has come to the attention of the bureau.

"The relation between the 10 per cent point and the vapor locking tendency of a gasoline is based on the 10 per cent point corrected for distillation loss. Hence if gasolines showing different amounts of distillation loss are to be put on a comparable basis as regards their vapor locking tendency, an allowance must be made for the effect of distillation loss on the observed 10 per cent point. If no correction is made, a gasoline with a high loss might pass the specifications whereas one with a low loss but the same vapor locking tendency might fail by several degrees. A simple empirical method of applying a correction for loss is proposed. The procedure is to permit a lowernig of the observed 10 per cent point by 3 degrees Fahrenheit for every per cent loss under 4 per cent. On this basis, the specification should place no limitation on any commercial product which would be generally acceptable to the public.

"A proposed limitation incorporated in a note only as an optional provision, permits the purchaser when necessary to raise the lower limit on the 10 per cent point. This limitation has been found necessary in some special cases and will be found equally necessary in commercial practice under similar conditions if competition does not automatically fix a similar limit. We are satisfied that no acceptable commercial product will be excluded by this limitation. However, the note in question is so drafted as to prevent, in so far as possible, its becoming a rigid requirement.

"Considering now the proposed new specification for a more volatile gasoline, the demand for this gasoline has arisen in various services where ease of starting in cold weather, and freedom from crankcase dilution under abnormally severe conditions are important. The same procedure has been followed as for U. S. Motor gasoline. It should be recognized that this is a product which will be available for purchase only under special conditions probably requiring special authorization, and it is not probable that this specification will acquire any considerable commercial importance.

"As a basis for this specification an attempt was made to determine what the trade considers a satisfactory high volatility gasoline. The 10 per cent of gasolines of highest volatility listed in the last Bureau of Mines Survey were averaged and the limits proposed for the new gasoline correspond closely to this average. Thus this specification reasonably represents current trade practice as well as a product which the government wants to purchase. It does not, however, like the U. S. Motor gasoline specification, involve any immediate commercial or legal complications. In fact the rather wide difference between the two specificatoins at the 90 per cent point in particular, should prevent any confusion between them.

Proposed Changes

"In brief, the proposed changes are as follows:

1. "The initial, end and 20 per cent points are omitted.

2. "A maximum and a minimum limit are set for the 10 per cent temperature, which will afford the necessary protection to government purchasers without, we believe, rejecting any generally satisfactory product.

3. "A new grade of gasoline is established for special purposes, which falls between U. S. Motor gasoline and domestic aviation gasoline.

4. "A special permission is granted for limiting the 10 per cent point of gasolines for tropical use, to protect the government against excessive loss in storage and difficulties in operation, when necessary.

5. "A correction for distillation loss is proposed at the lower limit for the 10 per cent point; elsewhere such a correction seems not to be important, at present.

"We believe," said Doctor Dickinson, "these two specifications as drafted will meet the needs of the government purchasers, with somewhat less restriction on commercial production than has existed heretofore."

Doctor Brown's Views

Doctor G. G. Brown pointed out that the board should be sure that a specification is entirely justified before undertaking to put it into effect. Under a great many conditions of operation, he said, fuels are being sold and used in a satisfactory manner by the public which do not come under the specifications providing that when 10 per cent has been recovered in the receiver the thermometer shall not read more than 176 degrees Fahrenheit, nor less than 140 degrees Fahrenheit.

This specification has been changed by adding the following explanations:

"At a meeting of the Technical Committee on Lubricants and Liquid Fuels held on February 16, 1929, it was agreed that the 10 per cent point shall not be less than 122 degrees Fahrenheit except that for every per cent less than 4 per cent obtained on the A. S. T. M. distilation, the minimum 10 per cent temperature requirement shall be lowered 30 degrees Fahrenheit. This applies to both grades of gasoline.

"It was also agreed that the following reservation should be inserted as a separate paragraph at the end of section 6 of both specifications:

"When gasoline is purchased for use in very hot weather or for tropical storage, or when there is a probability of such use or storage, the government reserves the right to require that the lower limit at the 10 per cent point be not less than 140 degrees Fahrenheit with the same corrections for distilation loss as applied at 122 degrees Fahrenhite."

Mr. Brown said he saw no objection to having the government specify a United States motor fuel with a maximum of 10 per cent, but he did not wish to see that provision written in the specification at the present time. He did not think the government or the industry had sufficient information at this time to do that.

No New Specification

Mr. Mackenzie of The Texas Company was insistent that the needs of the government should be taken care of without creating a new specification for motor fuel. Twenty-five million cars are on the road and they are working satisfactorily under existing conditions.

"In the future," said Mr. Mackinzie, "we may be able to provide gasoline for other vehicles."

It was stated that so far as was known the navy department had no trouble with vapor lock and so far as anyone knew such trouble does not exist with the present gasoline.

Captain Rutten insisted that the present specification for gasoline was not satisfactory. He said that along the Canadian border a higher volatility is needed and they should have a little better gasoline than is provided by the specification called "United States Motor Gasoline." He said the quartermaster department wishes to work in harmony with the refiners, but they did not feel that they were getting a fair deal.

Doctor Dickinson said that in some of their problems the board lacked definite information and it would take a long time to get it. Vapor lock, he said, had not been generally understood up to this time. They had a great deal of information scattered through the correspondence received by the Bureau of Standards, but they had not had time to properly analyze it.

Brown Motion

Doctor Brown offered a motion which was carried to the effect that the 10 per cent provision should not be incorporated in the United States government specifications for motor fuel, but that if any government department wished to have a special fuel they should provide for it.

Doctor Dickinson then stated that an emergency existed in the necessity for a special fuel and it was their duty to provide for this emergency and to do that the board wished to co-operate with the industry. The question was whether they were to have a limit providing for higher volatility.

Sulphur Specification

Mr. Delbridge made a motion that the conference should consider furnishing the technical committee with further information relative to the minimum 10 per cent point and that motion was carried. When the sulphur specification was reached Mr. Delbridge suggested that there was no scientific data on which to base a change or to fix a limit to the sulphur content.

"There will not be any change in the sulphur limit," he said, "until we have some well authenticated information that it will be well to change it."

The afternoon session of the conference was devoted to a futile attempt to fix upon the volatility which should be adopted for a special motor fuel, but the variety of opinion was so great it was not possible to bring about a general approval of any grade.

Doctor Dickinson suggested during this discussion that the board was not only interested in the starting qualities of the gasoline but also in the subject of dilution closely related to it.

Doctor Delbridge, basing his statement on the experience of his own company covering a period of five years, said that winter gasoline for general use does not require the 90 per cent or the 50 per cent limit sought to be placed upon it by the proposed specification of the board. His point of view was that if the technical committee wanted any special motor fuel for a special purpose it was not the business of the petroleum industry to object, but they did not want such a special grade provided for in the specification that are taken up as standards by state legislatures.

Dr. C. K. Francis of the Skelly Oil Co. thought there was no need of this specification at all. What really was needed was to have a law by congress that would permit the purchasing agencies of the government to buy whatever they want.

Government Requirements

In reply to that statement Captain Rutten said they are obliged to buy under the specifications. In order to get the conference to agree upon some definite specification for this proposed motor fuel it was proposed to vote on temperatures from 257 to 275 Farenheit when 50 per cent has been recovered in the receiver and from 356 to 392 when 90 per cent has been recovered, but there was a hopeless inability to agree upon these several propositions.

At the end of a long effort to reach some agreement the conference adjourned after having authorized a committee headed by Doctor Delbridge to meet Doctor Dickinson and other members of the specifications committee in an effort to bring about a tentative agreement. That meeting having been held, a further proposition by the specifciations board will be announced, with the hope that it will meet the general approval by the industry.

The following attended the conference:

Capt. Paul G. Rutten, U. S. A.; Capt. E. L. Scott, U. S. A.; Henry M. Milburn, senior engineer of tests, Bureau of Public Roads, Department of Agriculture; Dr. H. C. Dickinson; Oscar C. Bridgman; H. T. Kennedy; H. K. Cummings, Bureau of Standards; B. L. Andrus, Postoffice Department; Lieut. A. B. Canham, U. S. N.; C. E. Waters, Bureau of Standards; N. F. Harriman, Vice Chairman Federal Specifications Board; Lt. Commander James M. Shoemaker, U. S. N.; Commander M. C. Bowman, U. S. N.; W. A. B. Doying, inspecting engineer Panama commission; C. A. McCarthy, Veterans Bureau; G. F. Williams, Purchasing Division Merchant Fleet Corporation; Arch Leonard Foster, Secretary, Technical Committee on Lubricants and Liquid Fuels, Bureau of Mines; Lieut. Commander Norman B. Hall, U. S. Coast Guard; T. A. Boyd, General Motors, representnig C. F. Kettering, member of the advisory board for the Society of Automotive Engineers; W. S. S. Rodgers, Vice President, The Texas Company.; A. F. Anderson, Shell Petroleum Corporation; S. Bevin, Tidewater Oil Co.; R. A. Barnhard, Standard Oil Co., Indiana; S. Slitsky, Amtorg Trading Corporation; Gordon M. Atherholt, Gulf Refining Co.; J. S. Harrison, Standard Oil Co., Ohio; L. W. Parsons, chief technologist Tidewater Oil Co.; K.

G. Mackenzie, The Texas Company; E. W. Dean, Standard Oil Co., N. J.; Frank J. Shipman, The Texas Company; Irwin K. Giles, Warner Quinlan Co., James T. B. Bowles, Crown Central Petroleum Corp., Houston, Texas; F. T. Manley, vice president The Texas Company; Dr. G. W. Gray, The Texas Company; E. M. Keely, Jr., Crew Levick Co.; D. G. Brandt, Cities Service Co.; D. P. Keeney, Keeney Oil Co.; Fayette B. Dow; J. B. Rasher, Standard Oil Co., N. Y.; W. F. Burt, Standard Oil Co. of N. J.; Walter W. Peters, Beacon Oil Co.; Everett Wass; D. E. Buchanan, vice president Chestnut & Smith Corp., Tulsa, Okla.; Sidney Born, Transcontinental Refineries; Dr. C. K. Francis, chief technologist, Skelly Oil Co., Tulsa, Okla.; H. W. Camp, Empire Oil & Refining Co., Tulsa, Okla.; G. G. Oberfell, Phillips Petroleum Co.; Geo. G. Brown, Western Petroleum Refiners Association, Natural Gasoline Association of America and Director of Research, University of Michigan, Ann Arbor, Mich.; B. C. Frechot, Shaffer Oil & Refinery Co., Cushing, Okla.; Florus R. Baxter, Vacuum Oil Co.; Lewis B. Van Leuven, Vacuum Oil Co.; Charles A. Moser, Vacuum Oil Co.; B. W. Dudley, Vacuum Oil Co.; A. L. Beall, Vacuum Oil Co.; G. Smith Herschel, Gulf Refining Co.; Albert W. Miller, Sinclair Refining Co.; Robt. E. Wetson, Standard Oil Co., Indiana; E. W. Isom, Sinclair Refining Co.; W. F. Farquhar, Universal Oil Products Co.; E. B. McConnell, Standard Oil Co., Ohio; Arthur E. Pew, Jr., Sun Oil Co.; A. Ludlow Clayton, Sun Oil Co.; H. B. Pullar, Jas. B. Berry's Sons Co., Chicago; R. E. Luton, Lincoln Oil Refining Co., Robinson, Ill.; R. T. Colquette, Root Refining Co., ElDorado, Ark.; R. C. Catertrom, Pine Oil Co., Chicago; T. G. Delbridge, Atlantic Refining Co.; H. C. Hottel, the Barber Asphalt Co.; C. N. Forrest, Barber Asphalt Co.; Harold G. Osborn, Marland Refining Co., Ponca City, Okla.; W. S. Zehrung, the Pennzoil Co.; M. C. Lean, Houston, United Refining Co., Elk Refining Co., and Carnegie Refining Co.

OPERATORS ANXIOUS IN ROCKY MOUNTAINS

(Continued from Page 30)

ing begins. Often it takes two years more to drill a well.

Under these extension acts, the department worked out some plans to handle these matters which the operators considered a rational view of the situation. Take, for example, a structure upon which five parties may hold permits. It would be considered an economical waste to drill five wells at once with a cost of $50,000 to $150,000 each on a single untested structure and the party holding the permit on top hardly would want to make the test at his own expense while the others sat by and awaited the results. Out of this grew a plan for the holders of permits to join together and contribute towards the cost of the single well, this cost contributing to a compliance with his permit requirements. If oil is found, the other permittees then must drill as required. Take the Elkridge structure in Utah, for instance. The structure embraced more than 100,000 acres held by numerous permittees. One well, to which 10 or more companies contributed, cost in excess of $200,000 and not a barrel of oil was secured. It took two years to drill the well. It required six months' geological work before the first step to drill was taken. Four months time was expended in building roads to reach the location with materials. It is apparent it would have been impossible to have done the preliminary work and drilled the one well within the two years time under such conditions and it is hardly to be supposed an operator would have undertaken the expense and run the risk of having the permit cancelled on him, not to mention the 10 or 15 wells that might have been required without a co-operative agreement.

New Mexico's Situation

Take Lea County, New Mexico. There is an area 108 miles long and 30 miles wide which is blanketed with permits and leases. While there is some private and some state land, most of it belongs to the Government. The surface of that vast area is so covered it has been impossible to work out the structures by surface geology alone. The torsion balance, the magnetometer, and other geophysical instruments have been used, but drilling alone can really disclose the location of the structures. Drilling has been in progress for several years and it is estimated $15,000,000 to $25,000,000 has already been expended on the one play. While there is more information now available as a result of the compiling of well logs than ever before, the major pools have not yet been definitely spotted. Some of the land represents an investment of $25 to $100 per acre. The investment is enormous. Suppose the operators felt their permits would not be extended and in order to protect the money already invested they would have to drill to comply strictly with the provisions of their permits. It would take at least 150 wells, and probably more, at a cost of $10,000,000, drilled at once, to take care of the situation. If this work actually developed the pools it is hoped will be found, the result would be a flood of oil that would defeat any conservation policy the Government might try to promote. This situation applies in a smaller degree all over the Rocky Mountain area and there is an immediate danger of a drilling campaign of unprecedented proportions extending from the Canadian border to Mexico. This is one of the reasons why the operators are anxiously awaiting a disclosure of the Government's policy regarding the extension of existing permits.

Some of the major companies are expending money investigating the possibilities for oil in Senator Borah's state of Idaho. Senator Borah, it is understood, has come out in support of the new policy. It is doubtful if the work will go ahead if what is feared comes to pass. The operators probably would prefer to pull out at once and lose what already has been expended than to go ahead. More than $5,000,000 has been expended in wildcatting in Utah without bringing in a single pool.

Up to December 31, 1928, the permits granted on public lands aggregated 34,950 under Section 13 of the leasing act. There had been cancelled out 14,690 of these leaving 20,260 outstanding. In the nine years in which these permits were granted only 56 leases have been issued on permittee land. (A lease is issued after a discovery has been made and generally there are two leases on a single permit. The discovery has to be of commercial importance.) While the exact figures are not available, it is estimated the total output per day from these leases at present is not in excess of 5,000 bbls. Possibly half of the discoveries were gas wells. The oil production, on the basis of that estimate is one-fifth of 1 per cent of the daily production of the country. If that is the result in nine years, the best nine years where some of the structures were known before the leasing act went into effect, it is not considered likely the results in the immediate future can have much bearing on the general oil situation.

Wildcatting Affected

One operator pointed out a danger to the country, as he sees it. Take Lea County, New Mexico, again as an illustration. Suppose this country should again be plunged into war and oil again became a vital necessity. The war would be over in all probability before Lea County pools could be located and be of an yaid in an emergency.

Something has been said to the effect that the new rule would cut out the small man who takes out a permit on a chance of finding an operator to drill. He is in no position to finance a well and has to depend upon others. One operator said that nine-tenths of the land his company wildcats comes in from these people and that it was not to the interest of the oil industry to have them any aid in an emergency.

There are many angles that promise to raise a storm of discussion. The Mid-Continent and Texas fields may benefit from the cessation of wildcatting in the public land states, but it is doubtful if the operators want that kind of help at somebody else's expense. Another issue almost certain to arise is that states with large areas of public domain will revive heartily the question of state's rights when they see half of their area closed to prospecting while states with no public lands reap the benefit. The states also have an economic interest. The Government has received $67,747,621 in money from operations upon government land under the leasing act. Of that amount $47,958,000 came from Wyoming, $17,333,000 from California, and other states in lesser amounts, a considerable part of which goes back to the states.

1928 PRODUCTION SET AS LIMIT FOR FUTURE

(Continued from Page 29)

Government Represented

One of the most important points at the Houston meetings was the feeling of co-operation which was manifest by the representatives of the Federal Government and state authorities of Oklahoma, Texas and California who attended and worked with the committee on a definite program of conservation.

At the opening session Friday morning, Mr. Holmes introduced Dr. George Otis Smith, Washington, D. C., member of the advisory committee of the Federal Oil Conservation Board and director of the United States Geological Survey, who attended at the request of the Federal Oil Conservation Board as an "official observer."

Doctor Smith stressed the importance of harmony between the commission and the oil industry in carrying out plans for conservation. He stated that the Government is not so much interested in the 1929 situation as is in that of 1959 and that both the Government and the industry must plan for that time.

E. B. Reeser of Tulsa, president of the American Petroleum Institute, at whose instance the Houston conference was called, stated following the meeting that although the present overproduction problem had not been solved and there were numerous intricacies to be ironed out, and a lot more to be done, yet a great work had been accomplished and that if the plan is carried out the industry during 1929 will experience one of its most satisfactory years.

Mr. Reeser stated that the committee, faced with a tremendous crisis in the industry, worked as no other group of oil leaders had worked before to determine a foundation for a general conservation movement which would be fair to all concerned and at the same time really accomplish its purpose.

Clarence E. Gilmore, Austin, Tex., chairman of the Railroad Commission of Austin, struck a keynote when he told the committee that Texas was vitally interested in the overproduction situation. He stated that under present laws of Texas the commission's authority is limited to physical rather than economic waste and that he and the other officials were anxious to co-operate with the producers and take part in the meeting in planning conservation.

R. D. Bush of San Francisco, state oil and gas supervisor of the California State Mining Bureau; Fred Capshaw, Oklahoma City, chairman of the State Corporation Commission of Oklahoma; W. J. Armstrong, Oklahoma City, state conservation officer of Oklahoma; C. V. Terrell and Goodson Rieger, both of the Railroad Commission of Texas at Austin, also attended the sessions as invited guests and expressed their desire to work with the oil industry in their respective states to conserve the irreplaceable crude resources.

In order to facilitate the work of the regional committees in putting into effect the recommendations of the general committee and the anticipated action of the board of directors of the institute, it is probable E. B. Reeser, president of the institute, will appoint special committees to function in Texas and in the Louisiana-Arkansas section.

Members of the general committee attending the Houston meeting were R. C. Holmes, The Texas Company, chairman.

K. R. Kingsbury, Standard Oil Co. of California; L. P. St. Clair, Union Oil Co. of California; and G. Legh-Jones, Shell Co. of California, representing the Pacific Coast regional committee.

W. C. Franklin, Tidal Oil Co.; B. H. Stephens, Magnolia Petroleum Co.; Roy B. Jones, Panhandle Producing & Refining Co.; W. N. Davis, Phillips Petroleum Co., representing the interior regional committee.

F. R. Coates, Henry L. Doherty Co.; R. W. McIlvain, Pure Oil Co.; Axtell J. Byles, Tide Water Associated Oil Co.; and W. S. Farish, Humble Oil & Refining Co., representing the Gulf and Atlantic Coast regional committee.

E. J. Sadler, Creole Petroleum Co.; J. W. Stewart, Pan American Petroleum & Transport Co.; Richard Airey, Asiatic Petroleum Co.; A. E. Watts, Sinclair Consolidated Oil Co., representing the Mexico and northern South America regional committee.

Other leaders in the petroleum industry present included C. B. Ames, vice president, The Texas Company, New York; R. L. Blaffer, Humble Oil & Refining Co., Houston; Burdette Blue, vice president, Indian Territory Illuminating Oil Co., Bartlesville, Okla.; W. R. Boyd, Jr., ex-vice president, American Petroleum Institute, New York; E. R. Brown, president, Magnolia Petroleum Co., Dallas; J. A. Brown, General Petroleum Co., Los Angeles; Roderic Crandall, Anadarko Western Oil Co., Tulsa; F. V. Faulkner, vice president, Magnolia Petroleum Co., Dallas; James W. Finley, Empire Gas & Fuel Co., Bartlesville, Okla.; C. H. Kountz, vice president, Prairie Pipe Line Co., Independence, Kans.; John H. Lapham, The Texas Company, San Antonio; Clarel B. Mapes, Mid-Continent Oil and Gas Association, Tulsa; J. A. Moffett, vice president, Standard Oil Co. (New Jersey), New York; E. H. Moore, Independent Oil & Gas Co., Tulsa; R. Ogarrio, vice president, The Texas Company, New York; R. W. Pack, Sun Oil Co., J. Edgar Pew, vice president, Sun Oil Co., Dallas; Richard Pratt, Standard Oil Co. (New Jersey), New York; Wallace E. Pratt, Humble Oil & Refining Co., Houston; E. B. Reeser, president, Barnsdall Oil Co., Tulsa; J. M. Sands, Phillips Petroleum Co., Bartlesville, Okla.; W. A. Sinshheimer, H. L. Doherty & Co., New York; T. E. Swigart, Shell Oil Co., Los Angeles; Covern Van, American Petroleum Institute, New York; Earl W. Wagy, Standard Oil Co. (California), San Francisco; W. B. Walker, Standard Oil Co. (New York), New York; H. C. Weiss, Humble Oil & Refining Co., Houston; C. A. Young, American Petroleum Institute, Dallas; and Harry F. Sinclair, chairman of the board, Sinclair Consolidated Oil Co., New York.

OIL INDUSTRY MUST TAKE CLEAR STAND

(Continued from Page 31)

acceptable to ourselves and to the governmental authorities.

It is with this in mind that I feel warranted in attempting to outline in some detail, before the reports of the four Regional Committees are presented and studied, some of the subjects of our operations which I think we should discuss and on which we should have the fullest possible information; first, because the entire industry itself must understand the situation and whatever we may attempt in order to willingly co-operate; and, second, because notwithstanding the fact that we and the Federal Oil Conservation and state conservation authorities might be in accord, we need before us all of the facts that bear on the matter in any way.

Program Recommended

I hope we will take the time to discuss these matters in detail that we may get the benefit of the counsel of all members and guests, and that we may in the end arrive at the best method and procedure. To this end I recommend that at least the following items be considered:

1. That while we may be dealing

here today principally with the United States and the balance of the Western Hemisphere, we should have the whole world picture in mind as possibly essential to the success of any really effective plan.

2. Determine the extent to which crude production as a whole should be reduced to constitute substantial conservation, and preferably, to an amount not in excess of 1928 production.

a. Extent to which crude production should be further reduced to permit of absorption of excess stocks, if any.

b. Amount of crude production required to produce the American petroleum industry's requirements and the world's requirements of gasoline—

1. On the basis of some general accomplishment of units of the industry most fully equipped with cracking units;

2. On the basis of maximum yields of gasoline that would be possible today with present known and proven cracking processes, assuming the necessary requirements of kerosene and lubricating oil could at the same time be produced, disregarding the reduction in fuel oil yield, assuming the coal industry would welcome the opportunity of supplying the fuel.

c. Determine whether reduction at this time below actual consuming requirements on the basis of 1928 refinery yields plus such reduction as would reduce stocks to a normal or desirable maximum, would be all that it would seem possible to accomplish at this time, with the expectation that this maximum limit on production be maintained at this point and that gradual improvement in processing should result in increased yields of gasoline and other essential petroleum products for the next one, two, three, four, or more years from the crude production fixed as the 1929 maximum.

Determine Recoverable Oil

3. Determine as accurately as possible the probable recoverable oil from present known or producing fields in the United States and all other fields of the world, as well as the opinion of those who are considered best qualified to determine or estimate the possible amount of oil that is yet undiscovered but that may possibly be made available in the future.

The best geological authorities, I think, will agree that there is not over one-third of the area of the United States in which it is considered possible to find petroleum in paying quantities, and that third has been thoroughly geologized and a very considerable part of it tested with the drill.

4. Determine the manner in which control can be exercised over production in order that the maximum limits agreed upon may not be exceeded and that each district or territory will, so far as possible, keep within the plan.

a. Consider the possibilities of such control with such co-operation as is possible within the industry today.

b. Consider definitely whether state legislation is necessary and, if so, the precise nature of such required legislation in each of the states, particularly where the overproduction situation exists and where it may most likely be a problem in the future.

c. Ascertain whether federal aid or legislation is now considered necessary and, if so, the extent and nature of such aid or legislation as would be needed to sustain control of production as well as to give the necessary support, if such authority is needed, to co-operate with other nations in the world wide conservation.

d. Consider to what extent the regulation and control of gas production will contribute to the plan and be an aid to the permanent success thereof, and take action to bring about an acceptable and satisfactory solution of this feature of petroleum production.

e. Consider to what extent more uniform leasing contracts and provision for zoning, either voluntary or by law, would be an aid, and try to agree upon a plan for such zoning as is essential in preventing extravagance and waste.

f. Set up the necessary committees or machinery for keeping such plan as may be adopted in operation.

5. How can waste be avoided?

a. Study what can be saved to the industry and to the consumer by a more orderly and more economic system of producing oil and of such drilling only in new developments as is necessary to clearly define the field and that will produce the oil under control, and compare this with the cost of waste of recoverable oil when there is no control, or when the oil is taken out rapidly, as in many instances, and water encroachments and gas depletion take place prematurely.

(A study and comparison of the Mexia, Wortham and Powell developments in Central Texas, and Salt Creek, Wyoming, and Cabin Creek, West Virginia, is of interest in this connection.)

b. Determine the cost to the industry of the present fuel oil situation as against the markets and conditions applying when fuel oil prices were such that coal was on a competitive basis for steamship and shore installation, and ascertain what effect and advantages might be derived by the coal industry and possibly railroads and other affected interests if we were to reduce fuel oil manufacture by, say, 50 per cent under the 1928 production.

(My judgment is that it would result in better conditions in the oil industry and a great stimulus to the coal industry at large.)

c. Ascertain the cost to the industry of storing and carrying the excess stocks as will probably accumulate if production continues at the present rate.

d. What activities can we properly undertake to encourage a check on wasteful consumption of petroleum products as a part of conservation activities?

Effect of Scientific Instruments

6. Determine what will probably be the effect of geophysical instruments and other scientific aids in locating oil deposits, and the desirability of encouraging such activities and discoveries with a view of having more accurate knowledge of deposits, and the effect of such determinations in giving stability to the industry. The effect of such discoveries with of without control of production. Also the advantages of such determinations as against the difficulty, expense and delay of development in the event known supplies should decline below the actual minimum market requirements.

7. Determine whether we, as an American Nation, should find it desirable to encourage the same degree of restriction and conservation on the part of foreign fields as of our own, or whether it would be in our interest to assume the larger share of restriction here at this time in order to prolong the life of our own fields or deposits.

8. What should be the attitude of countries which are producing petroleum as differing from those countries which do not produce? Should not the countries without production have quite as much, if not more, interest in the conservation and control of production as those countries which are exhausting their known supplies?

9. It is estimated that the United States is now producing about 72 per cent of the world's supply of crude oil and is consuming about 65 per cent, with only about 18 per cent of the known reserves.

Oil's Part in Power and Heat

10. According to figures compiled by the National Industrial Conference Board, a little over 80 per cent of the installed horsepower in machinery in the United States, including water power and all other, as prime movers or power generators, was in automobiles, trucks and buses, almost entirely operated by gasoline. This in addition to power plants and heating by other petroleum products. It is estimated that about 30 per cent of all actual developed power and heat is by petroleum.

11. Federal tax figures indicate that the earnings of the American petroleum industry as a whole have been the lowest in the years of serious overproduction. In 1923 the net earning of the industry as a whole was a little over $76,000,000, or 00.95 per cent on an estimated investment of $8,000,000,000, after income tax and all other taxes, in which year the production was 174,876,000 barrels in excess of 1922, or about 31½ per cent increase. In 1927, the earning was a little over $104,000,000, of 00.99 per cent on an estimated investment of $10,500,000,000, after income tax and all other taxes, in which year the production exceeded the previous year by 130,255,000 barrels, or 16.9 per cent. For the years 1919 to 1927, inclusive, it is estimated that the earnings averaged 3.27 per cent.

It is interesting to note that in 1927 the consuming public paid $258,838,813 in state gasoline taxes, which was approximately two and one-half times the profits of the petroleum industry. When all is said, the interests of the public and of industry are one and the same.

Must Look Ahead

We should be quite as concerned, as an industry, as a nation, and as a people, about the supply of crude petroleum and the essential products thereof, twenty, thirty, or fifty years from now as at present, and while the temporary or immediate welfare of the industry itself is of great interest to the public and to the nation, it may not be considered of sufficient importance in itself to give support to a comprehensive and satisfactory plan. It should be, however, of vital interest on the part of the public in conserving, to whatever extent is possible, this natural and important resource by such action as gives better assurance of a steady and uninterrupted supply for the future. And it seems to me that we have plenty of evidence of a most intelligent understanding of our problem on the part of the authorities, who still patiently consider it a problem for the industry, itself, to solve and who are either in position to aid in the matter or to advise us from time to time as we go on, whether we are pursuing lines which are in the general interest of the country and of the industry.

Some of these matters you may find cannot be concluded during this meeting and can, to better advantage, be assigned to sub-committees.

PAN AMERICAN STARTS ARUBA ISLAND REFINERY

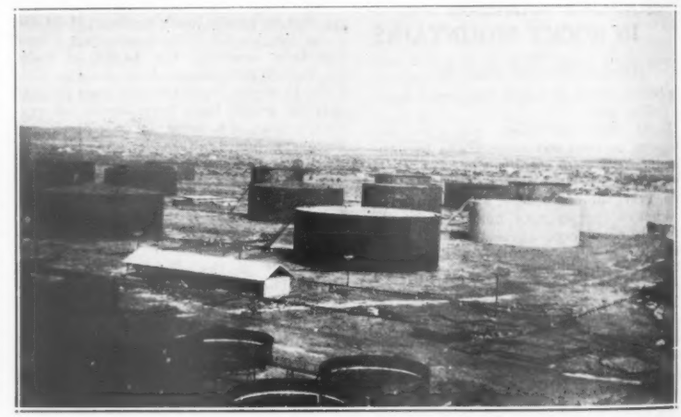
(Continued from Page 140)

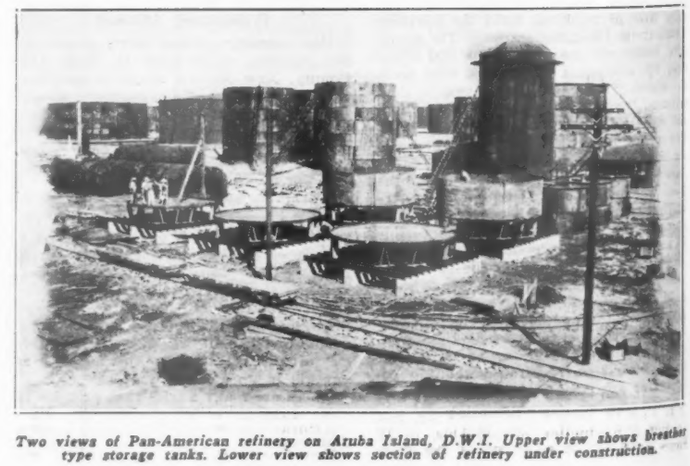
in the South Atlantic States, and through this latter company, acquired the Capital Oil Co., with wholesale and retail marketing branches in Virginia and West Virginia. American Oil Co. operates largely in Virginia, West Virginia, Alabama, Georgia, Florida, Tennessee, Louisiana and Mississippi. Pan American through Mexican Petroleum Co. has fairly wide retail distribution in New York and New England, in addition to a chain of stations in New Jersey, and is reported planning to expand its retail outlets in this territory.

Expansion Plan

Construction of the Aruba refinery marks the first definite effort on the part of Pan American to exploit its Venezuelan production to the utmost. Through Lago Oil & Transport Co., of which Pan American owns 98½ per cent of the capital stock, the latter company is one of the largest operators in Venezuela. It is currently shipping about 115,000 bbls. of crude oil daily from Venezuela, as against approximately 90,000 bbls. per day at this time last year. The Aruba refinery will be able to absorb 110,000 bbls. daily of this production. In addition to the Aruba plant, Pan American has a large refinery at Tampico, with capacity for 125,000 bbls. per day.

A year or so ago, large quantities of Venezuelan crude were being shipped to the Tampico plant for refining, but Mexican taxes on the handling of this oil were so great that it was found impracticable to continue this method of operation, in the face of the competition from other sources. Pan American has been shipping some of its Venezuelan oil to its Destrahan refinery near New Orleans, which has capacity of 35,000 bbls. daily. Most of Pan American's Venezuelan oil, however, has been shipped to refining centers on the North Atlantic, where it has been topped, under contract, and the bunker oil and gasoline thus produced marketed by Pan American.





Two views of Pan-American refinery on Aruba Island, D.W.I. Upper view shows breather type storage tanks. Lower view shows section of refinery under construction.

WEST TEXAS FIELDS

(Continued from Page 40)

reached another production peak last week when it gauged 2,170 bbls. of 56.3 gravity oil. Some of the most optimistic believe the well will eventually go to 5,000 bbls. daily naturally while the more conservative guesses range between 2,500 and 3,000 bbls. Since the bringing in of this well, however, there seems to be a growing inclination on the part of operators to dig for the corresponding pay in other areas. Three such tests are scheduled for Pecos County and the latest report is that T. B. Slick is planning an 8,000-foot test on a block assembled in southeastern Runnels and western Coleman Counties.

Proration Report

The proration report for the period of March 15 to April 1 as prepared by Reed Alsobrook, umpire, is given below showing the potential and allowed production by companies.

WINKLER COUNTY POTENTIAL AND ALLOWED RUNS BY COMPANIES MARCH 15 TO APRIL 1

Company—	Wells	Units	Potential production	Allowed production	Pipe line allotment
Amerada Petroleum Corp.	6	5	11,408	2,170	2,170
American Maracaibo Co.	2	¾	2,920	370	370
Atlantic O. P. Co.	33	13	145,378	9,899	9,200
Atlantic-Kessler-Logan	2	1	5,038	535	535
Atlantic and Collett	13	4	34,405	2,666	2,666
Bankers Prod. Corp.	1	⅛	562	65	65
Cranfill & Reynolds	7	2	8,784	1,026	1,026
Cranfill & Pickrell	1	1	.....	350	350
California Co.	8	2	15,214	1,260	1,260
Culberson Brothers	1	¼	724	115	115
Eastland Oil Co.	3	2	2,145	780	780
Empire G. & F. Co.	3	2	4,468	864	864
Gulf Prod. Co.	36	17	399,192	20,640	20,640
Humble Oil & Ref. Co.	44	21	169,692	13,594	13,594
Independent O. & G. Co.	19	8½	26,235	3,941	3,941
Marland Prod. Co.	9	4	17,457	2,043	2,043
May Oil Corp.	1	⅛	.....	44	44
Mining & Engineering	1	¼	70	91	91
Magnolia Petroleum Co.	9	3	4,709	1,224	1,224
Murchison & Cranfill	8	2¼	14,251	1,312	859
Murchison & Lee	2	½	2,430	264	185
Republic Prod. Co.	16	5½	61,496	4,130	3,300
Richardson & Kelsey	1	1	400	365	365
Prairie O. & G. Co.	12	5	138,432	6,844	6,694
Pure Oil Co.	39	13	275,994	14,705	13,923
Skelly Oil Co.	15	7	197,658	9,723	9,723
Southern Crude	163	84¾	496,310	47,934	46,271
Shell Pet. Corp.	41	19	141,583	11,859	11,619
Shell-The Texas Company	44	16	176,631	12,099	11,857
Texon O. & L. Co.	11	4	19,981	2,135	1,852
Simms Oil Co.	1	⅛	174	123	123
Warner-Quinlan	1	1	3,791	489	489
Wentz Oil Corp.	1	1	384	364	364
Winkler O. P. Corp.	1	¼	102	92	92
Units not yet in production		2 7/12		904	
Grand total	555	250	2,378,018	175,019	168,694

WEST TEXAS COMPLETIONS

Week Ended March 16

Crockett County

Barbour Oil Co.'s No. 1 Cox, 237 feet from south and 1,190 feet from east line of Section 1, was dry and abandoned at 1,507 feet.

Glasscock County

McElreath & Suggett's No. 1 Underwood, C NE Section 24, Block 36, Township 4s, T.&P.R.R. Survey, location was abandoned.

Jones County

Snowden & McSweeney's No. 6 Bickley, Section 50, Block 18, T.&P.R.R. Survey, made 400 bbls. at 2,517-22 feet and was drilled to a total depth of 2,575 feet.

Howard County

Humble Oil & Refining Co.'s No. 2 Clay, 330 feet from south and 2,310 feet from west of NE Section 138, Block 29, was shot with 40 quarts at 1,796-1,826 feet and had an initial production of 105 bbls. Hyer & Yates' No. 3 Clay, 990 feet from north and 2,310 feet from east of Section 155, Block 29, was shot with 40 quarts at 1,832-48 feet and made 85 bbls. Merrick & Lamb's No. 7 Clay, 250 feet from south and 1,535 feet from east of Section 129, Block 29, was shot with 40 quarts at 1,776-82 feet and had an initial production of 80 bbls. Midwest Exploration Co.'s No. 2 Clay-C, located 330 feet from south and 1,650 feet from east of Section 138, Block 29, was shot with 20 quarts at 1,785-1,805 feet and had an initial production of 70 bbls. Owen & Sloan's No. 10 Roberts, 990 feet from south and 330 feet from east of NW cor. Section 136, Block 29, had an initial production of 60 bbls. hourly at 2,965-73 feet. Shell Petroleum Corp.'s No. 1 Settles, 330 feet from south and 990 feet from west of Section 135, Block 29, had an initial production of 423 bbls. in 12 hours at 2,948-56 feet. Ward Oil Co.'s No. 3 Roberts, 2,290 feet from south and 330 feet from west of Section 137, Block 29, had an initial production of 550 bbls. at 2,957-2,980 feet. Its No. 5 Roberts, 1,650 feet from south and 330 feet from west of Section 137, Block 29, had an initial production of 500 bbls., 10 per cent water at 2,945-70 feet.

Pecos County

California Co.'s No. 3 Smith, lease No. 1, located 1,789 feet from north and 1,005 feet from west of Section 2, Block 194, had an initial production of 65 bbls. hourly at 1,385-1,476 feet.

Winkler County

Gulf Production Co.'s No. 2 Hendricks, 1,310 feet north and 2,310 feet west of Section 44, Block 26, had an initial production of 800 bbls. daily at 2,860-93 feet. Humble Oil & Refining Co.'s No. 6 Hendricks-C, located 1,320 feet south and 2,310 feet west of Section 10, Block B-12, made 434 bbls. daily at 3,024-28 feet. Its No. 7 Hendricks-C, located 440 feet north and 990 feet west of Section 10, Block B-12, had an initial production of 200 bbls. daily at 2,644-2,873 feet. Independent Oil & Gas Co.'s No. 1 Russell, Section 27, Block B-12, was dry and abandoned at 3,165 feet. Phillip & McCullough's No. 1 Winkler-T, located 990 feet north and east of Section 27, Block B-12, location was abandoned. Pure Oil Co.'s No. 1 Hendricks-D, located 2,310 feet south and west of Section 44, Block 26, had an initial production of 428 bbls. at 2,863-2,933 feet. Skelly Oil Co.'s No. 1 Morton, 2,310 feet south and 1,650 feet east of Section 27, Block B-12, location was abandoned.

DAILY AVERAGE PRODUCTION BY LEASES
WINKLER COUNTY
Week ending March 12, 1929
HENDRICKS POOL

Company, farm, sec., blk—	Wells	Prod.
Amerada Pet. Corp.:		
Cowden, 3, B-12	3	1,110
Atlantic O. P. Co.:		
Hendricks-A, 34, B-5	8	1,457
Hendricks-B, 44, 26	4	792
Hendricks-D, 29, B-5	8	2,335
Hendricks-E, 41, B-5	6	3,537
Hendricks-G, 40, 26	7	1,647
Hendricks-H, 28, B-5	1	45
Atlantic and Collett:		
Hendricks-F, 40, 26	13	2,530
Bankers Prod. Co.:		
Hendricks, 30, B-5	1	268
California Co.:		
Hendricks, 29, B-5	8	1,305
Cranfill & Reynolds:		
Hendricks-A, 28, B-5	2	201
Hendricks-B, 35, B-5	1	99
Hendricks-C, 33, 26	2	229
Hendricks-D, 33, 26	1	3
Hendricks-E, 33, 26	2	861
Cranfill and Texon:		
Hutchings, 47, 26	1	84
Culberson Bros.:		
Hendricks, 40, B-5	1	94
Eastland Oil Co.:		
Hendricks, 33, B-5	2	378
Hendricks-B, 35, B-5	1	250
Hendricks-A, 34, B-5	1	250
Hendricks-A, 34, B-5	13	4,695
Gulf Prod. Co.:		
Hendricks-B, 45, 26	11	7,979
Hendricks-C, 40, B-5	6	2,306
Hendricks, 44, 26	2	754
Cowden, 3, B-12	2	1,792
Humble Oil & Ref. Co.:		
Hendricks-A, 34, B-5	17	5,951
Hendricks-B, 29, B-5	6	1,422
Hendricks-C, 32, 26	8	837
Hendricks-B, 47, 26	7	1,263
Hendricks-C, 10, B-12	4	2,611
Independent O. & G.:		
Hendricks-A, 34, B-5	8	1,447
Howe-B, 44, 26	2	108
McCabe, 36, B-5	2	356
Hendricks, 42, B-5	1	18
Vardeman-B, 41, B-5	6	1,057
Magnolia Pet. Co.:		
Hendricks, 29, B-5	8	906
Marland Oil Co.:		
Hendricks, 33, 26	4	1,170
Hendricks-A, 29, 26	2	215
Hendricks-B, 34, 26	2	310
May Prod. Co.:		
Hendricks, 34, 26	1	....
American Maracaibo:		
Hendricks-A, 28, B-5	1	110
Hendricks-B, 28, B-5	1	202
Mining & Eng. Co.:		
Hendricks, 10, B-22	1	195
Murchison & Cranfill:		
Hendricks-A, 35, B-5	3	1,170
Hendricks-B, 35, B-5	3	695
Hendricks-C, 35, B-5	1	32
Hendricks-H, 33, 26	1	1,900
Hendricks-I, 47, 26	2	650
Prairie Oil & Gas Co.:		
Hendricks, 40, 26	6	2,223
Cowden, 3, B-12	6	5,035
Pure Oil Co.:		
Hendricks-A, 41, B-5	11	2,279
Hendricks-B, 34, B-5	13	5,155
Hendricks-C, 45, 26	14	9,797
Republic Prod. Co.:		
Hendricks-A, 45, 26	6	2,269
Hendricks-B, 41, B-5	5	2,040
Hendricks-C, 42, B-5	5	379
Shell Pet. Co.:		
Hendricks-A, 45, 26	6	1,749
Hendricks-B, 28, B-5	5	1,305
Hendricks-C, 29, B-5	8	2,090
Hendricks-D, 41, B-5	6	713
Hendricks-E, 49, B-5	3	1,229
Hendricks-F, 46, 26	8	3,107
Hendricks-G, 39, 26	1	79
Shell-The Texas Co.:		
Cowden-A, 3, B-12	6	1,524
Hendricks, 45, 26	6	1,833
Hendricks-A, 29, B-5	11	5,048
Hendricks-B, 40, 26	6	865
Hendricks-C, 40, 26	6	2,266
Hendricks-D, 40, 26	6	874
Hendricks-E, 40, 26	4	1,115
Skelly Oil Co.:		
Hendricks, 40, 26	12	8,933
Hendricks-B, 39, 26	2	22
Hendricks-C, 39, 26	1	700
Southern Crude Oil Prod. Co.:		
T-67 Hendricks-A, 42, B-5	3	178
T-67 Hendricks-3-A, 4, B-12	4	403
T-67 Hendricks-B, 44, 26	5	704
T-67 Hendricks-3-B, 33, 26	5	632
T-67 Hendricks-C, 33, B-5	5	810
T-67 Hendricks-2-D, 28, 26	4	903
T-67 Hendricks-E, 42, B-5	4	144
T-67 Hendricks-F, 33, B-5	4	966
T-68 Hendricks-3-A, 33, B-5	3	252
T-68 Hendricks-B, 46, 26	2	161
T-68 Hendricks-A, 44, 26	6	980
T-88 Hendricks-B, 4, B-12	4	1,395
T-88 Hendricks-C, 29, B-5	7	873
T-88 Hendricks-D, 4, B-12	5	2,837
T-88 Hendricks-H, 28, B-5	6	1,247
T-88 Hendricks-I, 30, B-5	7	2,162
T-88 Hendricks-J, 30, B-5	5	1,880
T-88 Hendricks-K, 41, 26	5	1,465
T-88 Hendricks-L, 4, B-12	5	1,073
T-88 Hendricks-M, 33, 26	30	14,811
T-88 Hendricks-N, 28, 26	5	1,390
T-88 Hendricks-O, 28, 26	2	468
T-88 Hendricks-P, 28, 26	1	249
T-88 Hendricks-Q, 27, 26	1	382
T-88 Hendricks-R, 27, 26	2	948
T-88 Hendricks-S, 34, 26	4	1,130
T-88 Hendricks-T, 34, 26	6	819
T-88 Hendricks-U, 41, 26	7	1,460
T-88 Hendricks-V, 29, 26	1	76
T-88 Hendricks-W, 5, B-12	1	358
T-89 Hendricks-A, 35, B-5	3	153
T-89 Hendricks-B, 35, B-5	2	536
T-89 Hendricks-C, 35, B-5	3	701
T-89 Hendricks-D, 35, B-5	1	339
T-89 Hendricks-E, 40, B-5	2	105
T-89 Hendricks-F, 40, B-5	1	93
T-89 Hendricks-H, 46, 26	1	47
T-89 Hendricks-I, 10, B-12	2	843
T-89 Hendricks-J, 9, B-12	2	1,179
T-264 Hendricks, 5, B-12	1	off
T-90 Hutchings, 47, 26	1	97
Texon Oil & Land:		
Hendricks-A, 41, B-5	6	737
Hendricks-B, 45, B-5	5	1,047
Winkler O. P. Co.:		
Hendricks, 33, 26	1	86
LECK AREA		
Atlantic-Kessler & Logan:		
Leck, 3, 74	2	309
Amerada Pet. Corp.:		
Leck, 3, 74	2	749
Empire G. & F. Co.:		
Daugherty, 3, 74	3	556
Magnolia Pet. Co.:		
Scarborough, 1, C-22	1	116
Shell and Llano Oil:		
Scarborough, 1, C-22	3	114
Shell and Danciger:		
Leck, 3, 74	2	534
Prairie Oil & Gas Co.:		
Daugherty, 3, 74	1	298
Warner-Quinlan:		
Leck, 3, 74	1	466
O'BRIEN POOL		
Marland Oil Co.:		
Tobe Morton, 10, B-12	2	290
Wentz Oil Corp.:		
Tobe Morton, 10, B-12	1	202
Richardson et al:		
Stockton, 50, F	1	223

PECOS COUNTY
YATES POOL
Week ending March 12, 1929

Company, lease—	Wells	Prod.
California Co.:		
Yates—Lease 1	18	7,209
Smith—Lease 1, Sec. 27	3	454
Smith—Lease 1, Sec. 23	6	1,223
Smith—Lease 1, Sec. 21	3	601
Smith—Lease 2	2	154
Smith—Lease 3	12	1,822
Tippett—Lease 1	1	40
Cosby Drlg. Co.:		
Smith	1	257
Gulf Prod. Co.:		
All leases	32	11,713
Humble O. & R. Co.:		
M. A. Smith	10	1,463
Smith-B	5	781
Kirby Pet. Co.:		
Tippett	2	60
Kirby Pet. and Edson:		
Tippett	1	209
Marland Oil Co.:		
Yates-A	6	536
Yates-A-S	3	433
Matador Oil Co.:		
Smith	2	480
Mazda & Savoy:		
Smith	3	660
McMan Oil & Gas Co.:		
Smith-A	1	705
Smith-B	4	758
Smith-C	4	729
Tippett	2	244
Richardson	1	69
McMan and Marland:		
Yates	17	2,349
Mid-Kansas and Transcon.:		
Yates-A	24	12,266
Yates-B	27	6,584
Yates-C	11	5,691
Yates-D	6	6,778
Yates-E	1	100
Yates-F	4	788
Yates-G	4	998
Yates-H	8	5,961
Smith	3	1,110
Smith	18	2,729
A. W. Hawse:		
Pecos River Bed	7	750
Pecos Valley Oil Co.:		
Fee, Sec. 22, Blk. 26	2	86
Phillips Pet. Co.:		
Smith	1	74
Red Bank Oil Co.:		
Smith	5	437
Shell Pet. Co.:		
Tippett	11	2,135
Smith	9	856
Smith-B	1	616
Smith-D	3	459
Smith-E	1	24
Simms Oil Co.:		
Smith	7	5,069
Skelly Oil Co.:		
Tippett	1	90

STUDENT ENGINEERS TO DEBATE PRIME MOVERS

The relative merits of steam power, internal combustion engines and electricity as prime movers for the drilling of oil and gas wells of any depth will be discussed at the annual engineering students' debate sponsored by the Mid-Continent section of the American Society of Mechanical Engineers, to be held Friday evening, March 22, at the Tulsa Club, Tulsa. The University of Arkansas will argue for internal combustion engines; Oklahoma A. and M., for electricity and the University of Oklahoma for steam power.

University of Arkansas will be represented by J. H. Goff and C. D. Waldron, with R. A. Bowman as alternate; Oklahoma A. and M. by W. H. Manley and Lloyd Thompson, with Layne Ferguson as alternate; and University of Oklahoma by Robert Rogers and Edward Bartolina, with George Downs as alternate.

L. G. E. Bignell, Frank Hadley, J. W. Hays, K. R. Teis and Dean R. C. Beckstrom will serve as judges. Prof. H. C. Kent is acting as advisor for the University of Arkansas debaters, Prof. E. C. Baker for Oklahoma A. and M., and Prof. W. H. Carson for University of Oklahoma. Dean E. Foster will preside over the meeting. William G. Heltzel is chairman of arrangements.

The three-cornered debate is expected to bring out many oil producers in addition to members of the American Society of Mechanical Engineers, and if time permits there will be an open discussion of the subject after the debate and the decision of the judges.

EMPIRE P. L. STATEMENT

The Empire Pipe Line Co.'s statement for February shows pipe line receipts of 1,354,635.21 bbls., daily average 48,379.83 bbls.; deliveries 1,159,105.73 bbls., daily average 41,396.63 bbls.; stocks at close of February 4,491,238.54 bbls.

PRAIRIE AND T. B. SLICK DEAL INVOLVING MILLIONS

(Continued from Page 38)

ductive leases covering about 508,000 acres. He also has properties which he owns in fee and which were not included in the trade, although they may be oil bearing and he retains his large royalty interests.

PANHANDLE FIELDS

(Continued from Page 39)

west line, Section 88, Block 4, I.&G.N. R.R. Survey, made 220 bbls. at 3,150-60 feet and was drilled to a total depth of 3,175 feet.

Cochran County

Bolin and others' No. 1 Slaughter, 1,650 feet east and 660 feet south of northwest tract, League 118, Knox County School Land, was temporarily abandoned.

Gray County

The Texas Company's No. 5 Chapman-A swabbed and flowed 341 bbls. at 2,780-2,808 feet. Delmar Oil Co.'s No. 1 Chapman was drilled to a total depth of 2,852 feet, plugged back to 2,754 feet, shot with 140 quarts at 2,655-2,743 feet and swabbed 75 bbls.

Hutchinson County

Phillips Petroleum Corp.'s No. 6 Johnson Brothers (Barnum) was shot with 60 quarts at 2,848-78 feet and made 50 bbls. after which it was drilled to a total depth of 2,881 feet. Its No. 4 Johnson Brothers (Florence) was drilled to a total depth of 2,914 feet, shot at 2,854-2,914 feet with 100 quarts and made 525 bbls.

SPECIFICATIONS FOR SPECIAL GRADE FUEL

(Continued from Page 34)

50 degrees Centigrade (122 degrees Fahrenheit), provided that for each per cent distillation loss less than 4 per cent obtained in the A.S.T.M. distillation the minimum 10 per cent temperature requirement shall be lowered 3 degrees Centigrade (5.4 degrees Fahrenheit).

Note—When U. S. Motor gasoline is to be used for some special purpose, such as that requiring tropical storage, the Government reserves the right to raise the lower limit at the 10 per cent point to not higher than 60 degrees Centigrade (140 degrees Fahrenheit) with the same corrections for distillation loss as given above. This limit, however, should not be applied unless absolutely necessary, since the gasoline so procured is less satisfactory for general purposes.

When 50 per cent has been recovered in the receiver the thermometer shall not read more than 140 degrees Centigrade (284 degrees Fahrenheit).

When 90 per cent has been recovered in the receiver the thermometer shall not read more than 200 degrees Centigrade (392 degrees Fahrenheit).

At least 95 per cent shall be recovered as distillate in the receiver from the distillation.

7. Sulphur—Method 520.00. Sulphur shall not exceed 0.10 per cent.

8. All tests shall be made according to the methods for testing contained in part 2 of F.S.B. Specification No. 2D (Bureau of Mines Technical Paper 323B).

Motor Fuel V. 1. This specification covers the grade of fuel used by the United States Government and its agencies for motor vehicle and similar engines under special conditions where a fuel less volatile than domestic aviation fuel is satisfactory.

2. This fuel shall be free from water and suspended matter.

Properties and tests:

3. Sampling—Samples shall be taken according to procedures described in part 3 of this paper.

4. Corrosion test—Method 530.22. A clean copper strip shall not show more than extremely slight discoloration when submerged in the fuel for three hours at 122 degrees Fahrenheit.

5. Distillation range—Method 100.13. When 10 per cent has been recovered in the receiver the thermometer shall not read more than 70 degrees Centigrade (158 degrees Fahrenheit), nor less than 50 degrees Centigrade (122 degrees Fahrenheit), provided that for each per cent distillation loss less than 4 per cent obtained in the A.S.T.M. distillation the minimum 10 per cent temperature requirement shall be lowered 3 degrees Centigrade (5.4 degrees Fahrenheit).

When 50 per cent has been recovered in the receiver the thermometer shall not read more than 125 degrees Centigrade (257 degrees Fahrenheit).

When 90 per cent has been recovered in the receiver the thermometer shall not read more than 180 degrees Centigrade (356 degrees Fahrenheit).

At least 95 per cent shall be recovered as distillate in the receiver from the distillation.

6. Sulphur—Method 520.11. Sulphur shall not exceed 0.10 per cent.

7. All tests shall be made according to the methods of testing contained in part 2 of F.S.B. Specification No. 2D (Bureau of Mines Technical Paper 323B).

The report is signed by H. C. Dickinson, chairman, and Arch L Foster, secretary.

Late Fields

(Continued from Page 38)

The gauge of the well for the 24 hours ending Tuesday morning, 7 a.m., was 2,630 bbls. This amount of oil was cut 1.5 per cent, which is a slight increase from the previous day.

KANSAS

The Tuesday morning's gauge of the wells in the Sedgwick County Field follow:

Aladdin, Slick et al:	
1 Smyser	287
Gypsy et al:	
1 Branch	822
1 Bright B	619
1 Emerich	1,088
1 T. Goodrich	675
2 T. Goodrich	271
Skelly-Davis:	
1 Wilson	255
2 Wilson	225
Marland Prod. Co.:	
1 Goodrich	785
Mary Jane Oil Co.:	
1 Fitch	483
Hays & Reynolds:	
1 Roll	524

One of the latest failures in this region was Kirk & Jones' No. 1 Brown, NW cor. NW Section 6-26-1e, which had a hole full of sulphur water in sand 3,412-14 feet, and is drilling at the latter depth.

GULF COAST

HOUSTON, Tex., Mar. 19.—What appears to be an important well is Pure Oil Co.'s No. 1 Mays at Lost Lake Dome, northern Chambers County. Attempts to set screen failed when the heavy gas pressure blew the screen up in the hole. Tuesday operators were trying to kill the gas, which has the unusually high pressure of 1,100 pounds, in order to set screen. The blowout is from sand at a total depth of 2,701 feet. Union Exploration Co.'s No. 2 Esperson, a much watched rank wildcat in Liberty County, set screen at 3,944 feet and tested salt water Monday. It is being deepened.

The Texas Company's No. 1 Botney Bay, Port Barré Dome prospect, St. Landry Parish, Louisiana, which blew in several weeks ago flowing an estimated 500 bbls. daily without screen in the hole and sanded up, cleaned hole and after setting screen tested salt water. This was from sand at 3,763 feet.

NEW MEXICO

Empire Gas & Fuel Co. has staked location for a new Lea County, New Mexico test 330 feet south and west of the NE cor. NW SE, Section 6-22s-36e. This location is approximately a mile southeast of the Marland Production Co. and California Co.'s No. 1 Lockhart which made 338 bbls. Monday while cleaning out 10 feet off bottom from a total depth of 3,990 feet. The gauge is the best reported since the well was shot.

OUTLOOK IN ALBERTA IN OIL DEVELOPMENT

By Victor Lauriston

CHATHAM, Ontario, Mar. 16.—An official statement has been given out by Charles Stewart, Dominion Minister of the Interior, in connection with oil development in western Canada in 1928. The statement in part follows:

The production of oil during the calendar year reached a record total of 489,531 bbls., over 150,000 bbls. greater than during 1927.

Although commercial production of oil and gas has so far been confined to Alberta, good indications in the test wells in that province and near the Alberta-Saskatchewan boundary making it reasonable to expert extension eastward. The dry gas well brought in in the Ribstone area close to the provincial bounnary must be regarded as having an important bearing on the possibilities of gas in commercial volumes within reasonable distance of Saskatoon and other cities in Saskatchewan.

The completion of Okalta Oils' No. 1 with an open flow of wet gas greater than that of Royalite's No. 4 conclusively demonstrates that the production of the latter does not stand isolated, but that the dolomitic limestone is capable of still greater yields, provided wells are drilled under right conditions. The location of Okalta's No. 1 is particularly interesting and most encouraging as to the prospects of the lime in depth generally.

Following up the success attained in 1927, there was greater drilling activity in Turner Valley, and in other areas in the outer foothills, and on the plains extending from the international boundary to the Clearwater River in the extreme noth of Alberta. So far none of these tests has reached a depth to give conclusive results, but indications encountered are encouraging. The total footage drilled in deep test wells in western Canada during the 11 months ended November 30, 1928, was 163,137, representing 101 wells in actual drilling. During the year the completions in Alberta were: Producing wells, oil and gas, 17; producing wells, gas only, 3; total, 20. Seven wells were abandoned through accident or negative geological indications.

In all there are eight different and independent parties now engaged on test work in Alberta, and their efforts may confidently be expected to result in information leading to the location of other productive areas.

The following comparative table shows the increase in oil production in Alberta in past four years:

	Naphtha	Light crude	Heavy crude	Total
1925	165,717	2,926	.....	168,643
1926	211,008	2,609	5,981	219,598
1927	290,270	38,808	3,055	332,133
1928	410,623	70,734	8,174	489,531

Below is a statement of the natural gas produced and used in Alberta in 1928:

	Amount 1,000 cu. ft.
Turner Valley—	
For use in field	1,884,167
For use in refinery	1,169,757
For use by gas company	4,339,766
Bow Island	7,000
Foremost	712,000
Barnwell	5,000
Brooks	38,000
Viking	2,377,769
Wainwright	126,000
Bow Island town	36,000
Wetaskiwin	50,000
Bassano	2,000
Redcliff	860,000
Medicine Hat—	
Private wells	825,000
Farm wells	18,000
Total	14,198,959

The oil production figures show the success attained in the Canada Field and in view of the experience which has been gained concerning the geology of this area gives ground for well-founded optimism.

DEATH OF GEORGE GREENE

George Greene, 66 years, of Tulsa, who was in the oil business as a member of the firm of Craver & Greene, died in Tulsa recently of heart disease. The body was taken to Roxbury, Mass., for burial.

ALBERTA SOCIETY OF PETROLEUM GEOLOGISTS

CHATHAM, Ontario, Mar. 16.—The first annual meeting of the Alberta Society of Petroleum Geologists was held recently at Edmonton. The society, organized in January, 1928, is limited to bona fide members of the geological profession, membership requirements being the same as those for the American Association of Petroleum Geologists. Affiliation of the Alberta Society with the American Association is under consideration.

Fourteen papers were read and discussed: "Salt and Gypsum in Alberta," Prof. John A. Allan; "Interpretation of Some Structural Features in the Central Alberta Foothills Area," T. A. Link; "The Geological History of South Alberta During Late Cretaceous and Tertiary Time," J. O. G. Sanderson; "The Foremost, Pakowki and Milk River Formations in Southeastern Alberta," H. M. Hunter: "Geological Observations on the Western Portion of the Cypress Hills," D. L. Powers; "Some Features of the Mesozoic Sediments Between the Athabaska and Peace Rivers," A. J. Childerhose; "Regional Geologic Structure of the Prairie Provinces," B. F. Hake; "The Stratigraphic Position of the Kootenay," P. S. Warren; "Subsurface Stratigraphy of the Turner Valley Structure," P. D. Moore; "Post-Pleistocene Uplift in Alberta," Ralph R. Rutherford; "Salient Characteristics of Pre-Montana Cretaceous Sediments Between the Bow and Berland Rivers," J. B. Webb; "Presentation of Sections Showing Dakota Correlations at Various Points in Montana and Wyoming," E. H. Hunt; "Comparison of Stratigraphic Sections in Montana and Alberta," R. V. Johnson.

At the annual banquet officers were elected for 1929, as follows: President, Theodore A. Link, Imperial Oil, Ltd., Calgary; vice president, Prof. P. S. Warren; secretary treasurer, H. M. Hunter; business representative, B. F. Hake. The next annual meeting will be held in Calgary.

H. P. ANDERSON DEAD

H. P. Anderson, pioneer Tulsa oil operator, died Tuesday, March 12, in that city. He had been in failing health for 18 months, but was active up to the time he collapsed from a heart attack and died instantly.

Mr. Anderson was born in Clay County, Missouri, 70 years ago. He graduated from the Iowa State School of Pharmacy, following which he went into the drug business, later becoming a wholesale grocer in Colorado. He became interested in the oil business in California and when he moved to Tulsa in 1903 he divided his time between the oil and the power plant industries. He was one of the organizers of Tulsa's original electric power plant. At the time of his death he was a director in the Tulsa Cold Storage Co.

DRESSER DIRECTORS RE-ELECTED

The annual meeting of the stockholders of the S. R. Dresser Manufacturing Co. was held March 4 in Bradford, Pa. The present board of directors was re-elected as follows: Fred R. Miller, chairman; H. N. Mallon, president; Merrill N. Davis, vice president; Floyd W. Parsons, George L. Ohrstrom, William V. Griffin, Hamilton Pell, William T. Smith and W. Frank Miller.

OIL MEN'S CLUB OFFICERS

CHICAGO, Mar. 16.—The officers elected by the Chicago Oil Men's Club follow: President, C. S. Rosenthal, Apex Motor Fuel Co.; vice president, B. L. Majewski, Shaffer Oil & Refining Co.; secretary, Mel Kim, Apex Motor Fuel Co.; treasurer, T. A. Watson, Sun Co.; directors, R. A. McCornack, Refinera Petroleum Co.; Walter J. Herr, Mid-Continent Petroleum Corp.; C. W. Hardy, Sun Co.; O. L. Peterson, George C. Peterson & Co., and C. J. Murphy of the National Fuel Oil Co.

Support Pledged to Pennsylvania Grade Association's Work

LOGAN, Ohio, Mar. 18.—Appreciation of the work performed by the Pennsylvania Grade Crude Oil Association and pledge of organized support were recorded at a meeting here of the Southeastern Ohio Oil and Gas Producers' Association attended by oil and gas men of this territory, including Columbus, Steubenville and several cities of West Virginia. The following resolution, presented by H. D. Atha, Logan, was adopted unanimously:

"Whereas, The Pennsylvania Grade Crude Oil Association for the past five years has been diligently engaged through advertising and other publicity means in establishing the value and superlative merit of Pennsylvania crude oil as a base for lubricating oils and gasoline; and

"Whereas, This association has in our belief and opinion been instrumental in bringing about the increased demands for said Pennsylvania grade products and as a result a more fair and equitable price for Pennsylvania crude oil; and

"Whereas, This association in the accomplishment of this work has expended large sums of money in its advertising and publicity work; now, therefore,

"Be It Resolved, That the Southeastern Ohio Oil and Gas Producers' Association officially record its recognition, support and approval of the work of the Pennsylvania Grade Crude Oil Association and pledge its organized support and urge the individual members to pledge and contribute their financial support to the said Pennsylvania Grade Crude Oil Association."

R. J. Alexander, secretary of the Pennsylvania Grade Crude Oil Association, thanked the members for their expression of approval. J. P. Gordon, president of the Gordon Oil Co., discussed the present situation of the Pennsylvania crude producer and urged organization. A. E. Faine, New Straitsville, said conditions for the Pennsylvania crude producer had improved and that consumption probably exceeded production, tending to reduce the amount in storage. A round-table discussion was participated in by Mr. Faine; S. S. Webber, Columbus; A. D. Hufford, Bremen; Frank J. McCauley, Marietta; H. Barber and Barton Holl, Logan, and others.

W. F. Harrington, Marietta, spoke in favor of the proposed tariff on crude oil. E. J. Mildren, Marietta, reported a successful membership campaign. O. C. Dunn, Marietta, president of the local association, told of the organization's work in opposition to the gross tax measure, which apparently will not even be acted upon at the present session of the legislature.

EMPIRE COMPLETES LINE

The Empire Pipeline Co. has completed the construction of its 8-inch line, extending the company's system from the Cimarron pump station to Oklahoma City, a distance of about 32 miles, and the erection of the Greig pump station, near Oklahoma City. This station gives the Empire a total of 11 main line pump stations now in operation. In connection with this work the company also laid 5½ miles of 10 and 12-inch gathering lines. Crude will be run from the Oklahoma City well No. 1 of the Indian Territory Illuminating Oil Co. to the station through these lines by gravity.

TOM D. BROOKS DIES

HOUSTON, Tex., Mar. 16.—The death of Tom D. Brooks of Beaumont, Tex., removed one of the pioneers of Spindletop. In the early days of the famous field Mr. Brooks was with the Moore & Skinner Oil Co. He later became interested in the supply business, serving with the Texas Supply Co., the Beaumont Iron Works, and later with the Brooks Supply Co.

MOVE SMALL SKIMMING PLANT TO MUSKEGON

Grand Rapids and Muskegon, Mich., business men have purchased the 500 bbl. skimming plant formerly owned and operated at Lexington, Ky., by the Fayette Refining & Storage Co. The Lexington plant was erected about three years ago under the direction of A. V. Smith but was shut down within six months after it was completed for lack of a supply of crude. It will be moved to Muskegon as soon as a site has been chosen and enough oil contracted to keep it in steady operation.

Only Traverse formation crude oil will be run in the plant, which may be increased to a daily capacity of 2,000 bbls. Operators have been offered a 10-cent premium for their Traverse sweet oil and while no contracts have been signed a number of producers have agreed to sell oil to the new plant.

A Michigan corporation under which the plant will be operated is now in the process of organization. Purchase of the plant and provision of enough working capital to start operations will mean an investment of about $150,000.

The new plant will be in competition with the Standard Oil Co. of Indiana in the purchase of Traverse crude from Muskegon producers. The posted price on Traverse oil is the Mid-Continent scale. The Muskegon oil varies from 36 to 38 gravity. Most of the Traverse production of the Muskegon field is being shipped by rail to Zilwaukee, Mich., near Saginaw, where the Standard of Indiana owns and operates a 1,500 bbl. skimming plant.

EMPIRE SEEKS PERMIT TO OPERATE IN INDIANA

CHICAGO, Mar. 16.—The Empire Oil & Refining Co. has filed its application for a permit to do business in Indiana with the secretary of state's office at Indianapolis. The application for the permit, without which the company could not own property or enter into contracts in Indiana where the refinery will be located, states that the company is organized under the laws of Maine, that it is empowered by its charter to produce, refine and market petroleum products and places the estimated value of the assets in Indiana at $2,789,700. Engineers are making survey of the Baldwin Locomotive tract at East Chicago, Ind., where the refinery will be built.

The franchise for the use of the streets for sewers, pipe lines, water connections and trackage has yet to be read before the city council for the last time, but these is no anticipation of any objections. Work will begin as soon as this final action has been taken. It was stated that 2,000 men would be employed at once. The plans are for a refinery which can be expanded from the original units to a 30,000-bbl. plant.

GULF COAST MARKET SHOWING BETTER TONE

HOUSTON, Tex., Mar. 19.—A better volume of sales during the past week to meet the increasing seasonal demand for lubricating oils was reflected in the Gulf Coast lubricating stock market with a little better tone Monday and Tuesday. The demand, which still is in small tank car lots, continued far from being brisk and quotations as the week opened were unchanged and only fairly steady.

Fuel oils continued strong with little material available. Quotations were firm at 72½ cents minimum for Bunker C in cargo lots and indications pointed to higher markets. Gas oils seemed a little more free but otherwise the market continued strong.

PUBLICITY MAN DIES

BATON ROUGE, La., Mar. 16.—G. A. Waterman, director of public relations of the Standard Oil Co. of Louisiana, died at his home here following a brief illness. He was 61 years of age.

J. Edgar Pew Heads Project to Establish Children's Hospital

J. Edgar Pew of Dallas, Tex., vice president of the Sun Oil Co., and formerly president of the American Petroleum Institute, is head of a movement that has thus far developed into a board of sponsors which will seek to establish a Texas Children's Hospital. Leading citizens in every part of Texas are being called upon to join the movement, which is gaining momentum rapidly. The hospital would be a nonprofit, nonsectarian institution open to the children of the Southwest and placed on a financial basis which would enable it to care for 100 children. It is planned to provide for 50 children free, and this expense would be met by an endowment of $1,000,000. The hospital building would cost $600,000. The site of the hospital has already been obtained. It is opposite the Shrine Crippled Children's Home in Dallas. The proposed hospital plans to treat those affected with physical and mental diseases. The work of raising the $1,600,000 will begin in earnest in the near future. Texans will be given the opportunity of contributing to the various departments of the hospital in the shape of memorials and the departments and rooms thus provided for will be known under memorial names. State headquarters have been established in No. 505 Republic Bank Building, with Mr. Pew in charge.

MAGNOLIA ELECTION

At the annual stockholders meeting of Magnolia Petroleum Co. and Magnolia Pipe Line Co. both companies amended their charters by increasing the number of directors from 11 to 13. The directors and the office to which each was elected in the organizations named were: E. R. Brown, president; B. H. Stephens, vice president and general manager; W. H. Francis, vice president and general counsel; W. C. Proctor, vice president, treasurer and assistant secretary; E. E. Plumly, vice president and manager refineries; F. V. Faulkner, vice president and manager production; E. P. Angus, vice president and manager sales; D. C. Stewart, vice president and manager pipe lines; Ralph H. Kinsloe, vice president; Courtenay Marshall, secretary and assistant treasurer; D. A. Little, assistant general manager; F. M. Lege, Jr., director; R. Waverly Smith, director.

The new directors and officers elected were: Ralph H. Kinsloe, vice president; D. A. Little, assistant general manager; E. P. Angus, vice president and manager sales.

Other officers elected were: A. S. Hardwicke, assistant general counsel; E. D. Smith, assistant secretary; J. V. Farnsworth, assistant secretary; W. L. Neill, assistant secretary; R. J. Blackburn, assistant treasurer; W. E. Elliott, assistant treasurer; W. L. Holmes, assistant treasurer; L. S. Sinclair, assistant treasurer; G. A. Young, Jr., assistant treasurer; Roland Martin, assistant treasurer; E. N. Johnson, assistant treasurer; W. H. Marchbanks, assistant treasurer; W. H. Johnson, assistant treasurer and cashier; and L. Y. Newman, assistant treasurer.

DIESEL AVIATION ENGINE

Packard Motor Car Co. has started construction of a $1,000,000 factory in Detroit for the manufacture of Diesel-type airplane motors. The building will be completed early in April, and the plant will have a capacity for 500 engines a month. Deliveries will commence July 1. According to officials of the company, the engine will increase the range of carrying capacity of airplanes between 20 and 30 per cent, and will operate 30 per cent cheaper than gasoline engines. The engine consumes Diesel oil and is of the air-cooled radial type. The new motor weighs only 2 pounds a horsepower.

MEETINGS IN VARIOUS FIELDS ARE PLANNED

Plans for future work of the Mid-Continent section of the American Petroleum Institute Division of Development and Production Engineering, including one to hold meetings in various fields for dealing with specific problems, were discussed at a meeting of the section in Tulsa on Friday, March 15. The meeting was attended by executives in charge of production for various companies operating in the Mid-Continent district.

It was voted to recommend to the institute that the name of the "Division of Development and Production Engineering" be changed to "Division of Development and Production Practices." It was decided to initiate A.P.I. sectional meetings immediately in the various fields to discuss problems peculiar to those fields and at the same time to continue the Tulsa meetings for discussing problems of more general interest.

The two major problems selected for study by the Mid-Continent section are "Gas Lift Practice" and the "Crooked Hole Problem." Work on both problems is to be started by issuing questionnaires. The information obtained through these will be compiled by the committees assigned to this work. The questions and answers will then be presented for discussion in the Tulsa meetings.

C. P. Dimit, general superintendent of production for the Gypsy Oil Co., was appointed chairman to direct the work on production practices, and Charles Jacobsen, general superintendent of production for the Barnsdall Oil Co., was appointed chairman to head the work upon drilling practices.

DR. T. O. BOSWORTH

CHATHAM, Ontario, March 16—Word has reached Canada of the death in London, England, of Dr. T. O. Bosworth, at one time chief geologist for Imperial Oil, Ltd. A short time previously he had been in Ecuador in behalf of the British Controlled Oilfields, Ltd. As a young man some 23 years ago Dr. Bosworth entered the service of the Geological Survey of Scotland, at Edinburgh, where he worked under the supervision of the Late Dr. C. T. Clough on the Scottish coal fields. He came to Canada in 1913, but had no part in the Calgary boom, instead going into the Mackenzie region for a Calgary syndicate. From 1916 to 1918 he was engaged in examination of the International Petroleum Co. properties in Ecuador and Peru, and ultimately became chief geologist, and organized that company's geological department. In 1919 he became chief geologist for Imperial Oil, Ltd., and took charge of the exploration campaign that company was then launching in the Canadian West. He had laid the foundations for this work and was proceeding to South America when ill health forced him to return to England. His activities for Imperial included the location of the discovery well at Fort Norman. Dr. Bosworth was a member of numerous geological organizations and a prolific writer on petroleum geology. He was 46 years of age.

GEOPHYSICAL PROSPECTING

Papers dealing with geophysical methods of searching for subsurface structures favorable to the existence of oil or other minerals are given in a volume, "Geophysical Prospecting," published by the American Institute of Mining and Metallurigical Engineers, New York. All the papers were presented at meetings of the institute held in New York in February, 1928, and in Boston in August, 1928. They are grouped into three divisions, "General," "Electrical Methods," "Magnetic Methods," "Gravity Methods" and "Seismic Methods." The preface is written by Donald H. McLaughlin, chairman of the committee on geophysical methods of prospecting. All the articles are by leaders in their several fields.

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NATURAL GASOLINE IN RAPID ADVANCE

(Continued from Page 28)

buyers and there is nothing to indicate at this time that this demand will advance later in the year. An unknown factor in the situation at this time is the increased production from California. Last year the California expansion accounted for nearly 50 per cent of the total increase in natural gasoline production. Additional plants are under construction and the present output will increase later in the year. The California demand is not absorbing all of the increased supply and some of it is being brought around to the East Coast and sold in export channels. Should the California prices be lowered this coastal movement would become a factor in the Mid-Continent market.

Fuel Oil and Gas Oil

In regard to fuel oil and gas oil prices in the Mid-Continent many sellers are optimistic regarding prices during the next few months and point to government figures in support of their contentions. The government data covering production and stocks for January of this year and January and December of 1928 are summarized in the accompanying table.

The government figures show that while stocks accumulated in the Mid-Continent early last year the demand has exceeded the supply in recent months. For instance, stocks were reduced from 10,132,000 bbls. on December 31, 1928 to January 31, 1929, a decrease of 1,362,000 bbls. in 31 days.

The most significant figure in the government figures, however, is the decrease in the refinery yield of fuel oil and gas oil in the Mid-Continent area. Refiners crude runs to stills in January, 1929, totaled 15,322,000 bbls., a 2,492,000-bbl. increase over the 12,830,000-bbl. figure for January of last year. However, as shown in the table, fuel oil and gas oil production was actually less in January, 1929, despite this large increase in crude runs to stills. This reflects a manufacturing condition in which due to the spread of cracking facilities the yield of fuel oil and gas oil in the Mid-Continent was reduced from 49.8 per cent January, 1928, to 41.1 per cent in January, 1929.

These data unquestionably point to a more favorable situation in regard to fuel oil and gas oil. The pessimists in the fuel oil market constantly point to the increased production available from West Texas refineries. It is pointed out by others that they overlook the fact that a large part of this fuel is consumed locally and at no time have large quantities been available for sale in competition with Mid-Continent refineries north of the West Texas area. At the same time these remaining Mid-Continent refineries located in Oklahoma, Kansas, North and Central Texas, Arkansas and North Louisiana have reduced their yields of fuel oil and gas oil through more efficient plant operations.

In brief, many observers believe that the fuel oil and gas oil market has been kept down by conditions in part imaginary and the time has now arrived to move prices up more in line with other refinery products and the prevailing market for crude oil.

Gasolines and Naphtha

Opinions among the trade in regard to the refinery gasoline situation during the past week were somewhat divided. A few sales of 58-60 U. S. Motor gasoline at 6⅝ cents were reported although the general market was quoted on the basis of 6¾ to 7 cents. Most of the larger refiners are selling direct to the trade at 7 cents. The movement during the week was not heavy.

Several refiners are desirous of moving high gravity gasolines suitable for export. No large purchases by exporters were reported. Prices on these high gravity grades to the domestic trade were not changed during the week. Naphthas are too high to be attractive to interstate buyers and the movement in Oklahoma is largely confined to points within the State where the sellers are securing from 6⅝ to 6¾ cents.

A low of 6 cents was established on 41-43 water white kerosene early last week. The scale of prices range up to 6¼ cents with the bulk of the movement at 6 and 6⅛ cents. The 42-44 water white grades was bringing a low of 6¼ cents the first of the week. All grades are strong.

Inquiries were made for April kerosene on a basis of the present market. So far as known these offers were not accepted by the sellers who are expecting a strong market over the next 30 days.

Natural Gasoline

All grades of natural gasoline were strong on Tuesday. A price of 7½ cents was established on Grades A and AA late Monday and on Tuesday prices were firm. The BB grade moved up to 6½ to 6¾ cents and Grade C was selling at 6¼ cents.

Some of the manufacturers who have contracts with large refiners on the Gulf Coast were the principal buyers. Apparently all the material available for prompt shipment was bought up on Tuesday and the Oklahoma market was tight. Manufacturers are a unit in their belief that the market will continue strong over the balance of the month.

Lubricants and Wax

Some improvement is noted by Oklahoma manufacturers in the quantity of neutral oils and finished motor oils being ordered out by the jobbing trade. Some of this business is in expectation of the spring and summer demand. Bright stocks are strong with no changes in price. The offers from buyers of wax are under 4 cents per pound. One small sale at 3¾ cents for 124-126 was reported.

OIL BOARD APPROPRIATIONS

WASHINGTON, D. C., Mar. 18.—E. C. Finney, Assistant Secretary of the Interior, has asked the House Appropriations Committee to make available, until June 30, 1930, the remaining $25,000 of the $50,000 appropriated for the Federal Oil Conservation Board, so that it may continue studying the oil situation here and abroad.

OKLAHOMA P. L. STATEMENT

The Oklahoma Pipe Line Co.'s February statement shows pipe line receipts of 3,237,834.98 bbls. in Oklahoma; shipments of 3,028,990.28 bbls. and stocks at the close of the month of 3,354,338.43 bbls. The average daily pipe line runs were 115,636.96 bbls. and shipments 108,178.22 bbls. Compared with the January business, this is an increase of 3,066 bbls. per day in runs, but a decrease of 4,073 in shipments and an increase in stocks of 177,929 bbls., or an average of 6,355 bbls. per day.

OIL SECURITIES IN UPWARD MOVEMENT

(Continued from Page 147)

of 6 per cent first mortgage serial gold bonds and the application of the proceeds therefrom to the liquidation of notes payable and the balance to working capital follows:

Assets: Developed leases, undeveloped leases and physical properties, less depreciation and depletion, $6,101,841; appreciation of leases, $13,669,178; cast, $1,244,174; government securities, $439,899; accounts receivable, $110,466; crude oil, gasoline, etc., $23,229; materials and supplies, $295,548; other assets, $56,699; deferred charges, $64,863; total, $22,712,897.

Liabilities: Capital stock and surplus (represented by 428,967 nopar shares, $10,837,152; accounts payable, etc., $290,819; accrued property taxes, $6,000; 6 per cent first mortgage serial gold bonds, $2,000,000; contingent reserve, $151,734; surplus, $1,331,671; surplus from appreciation in value of oil properties and leases, etc., less stock dividends, etc., $8,095,521; total, $22,712,897.

Twenty Representative Stocks

The Oil and Gas Journal weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

January 26	$7.4
February 2	$7.3
February 9	$6.9
February 16	$6.9
February 23	$6.9
March 2	$6.9
March 9	$6.9
March 16	$6.9

Mountain & Gulf

Mountain & Gulf Oil Co. declared regular quarterly dividend of 2 cents, payable April 15 to stock of record March 30.

Standard of Kansas

Standard Oil Co. of Kansas reports for year ended December 31, 1928, net profit of $292,228 after depreciation, and other charges equivalent to 91 cents a share (par $25) earned on 320,000 shares of stock. This compares with net loss of $827,757 in 1927.

Swiss Oil Corporation

The condensed consolidated income and expense of the Swiss Oil Corp. and Ashland Refining Co. as of December 31, 1928, shows:

Revenue from sale of crude oil produced	$1,322,470.31
Revenue from sale of gasoline, fuel oil and kerosene (Refinery)	3,250,193.69
Miscellaneous income	10,800.35
Total income	$4,583,464.35
Deductions:	
Operating expenses	$3,205,652.84
Operating profit	1,377,811.51
Deduct depletion and depreciation	1,053,631.56
Deduct Federal Income Tax	40,037.10
Net profit	$ 284,143.16

Simms Petroleum

Report of Simms Petroleum Co. and subsidiaries for year ended December 31, 1928, shows net profit of $334,064 after interest, depreciation, depletion, etc., equivalent to 41 cents a share (par $10) earned on outstanding 806,038 shares of stock. This compares with net loss of $61,369 in 1927.

Producers & Refiners Corp.

Producers & Refiners Corp. and subsidiaries, for year ended December 31, 1928, reports net profit of $934,484, after depreciation, depletion, amortization, interest, development expense, etc., equivalent to $16.42 a share (par $50) earned on 56,907 shares of 7 per cent preferred stock on which there is an accumulation of unpaid dividends. Allowing for only regular 7 per cent annual dividend requirements on the preferred, balance is equal to 98 cents a share (par $50) earned on 748,779 shares of common stock, comparing with net loss of $2,920,281 in 1927, after depreciation, amortization, interest and losses on surrendered leases and abandoned wells, but before depletion.

OIL BONDS ON THE NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Members New York Stock Exchange, Kennedy Bldg, Tulsa, Okla.

	Company—	Date	Pct.	Int.	For week ended Mar. 15— Sales	High	Low	Close
11,603,000	American Nat. Gas. Co.	Oct. 1942	6½	A&O	No sales.			
3,000,000	Beacon Oil Co.	Nov. 1936	6	M&N	2,600	107¼	106	107¼
18,900,000	Cities Service deb.	Jan. 1966	6	M&N	No sales.			
15,000,000	Cities Serv. refunding deb..	Jan. 1966	5	M&S	38,200	90⅛	89⅝	90⅛
24,843,700	Cities Service Gas Co.	May 1942	5½	M&N	10,500	91	90	90
12,000,000	Cities Service Gas P. L. Co..	Jan. 1943	6	J&J	7,200	96⅛	94½	96
12,000,000	Continental Oil Co.	Nov. 1937	5¼	M&N	3,800	96	96	96
3,000,000	Dixie Gulf Gas Co. A	Sept. 1937	6½	M&S	1,600	86⅝	86½	86½
18,000,000	Empire Oil & Ref. Co.	Apr. 1942	5½	A&O	12,000	90	89½	89½
3,877,100	Galena Signal Oil Co.	Apr. 1930	7	A&O	No sales.			
30,904,000	Gulf Oil of Pa.	Dec. 1937	5	J&D	5,400	99	98⅝	98⅝
12,000,000	Gulf Oil of Pa. debs.	Feb. 1947	5	F&A	5,200	100½	100	100
4,000,000	Houston Gulf Gas	Apr. 1943	6	A&O	1,400	90½	90	90
4,000,000	Houston Gulf Gas	Apr. 1943	6½	A&O	3,500	91¼	91	91¼
6,339,000	Independent Oil & Gas	Mar. 1939	6	M&S	16,200	107⅝	106⅝	106⅝
15,000,000	Lone Star Gas Co.	May 1942	6	M&N	3,000	98	97	97
11,650,000	Richfield Oil Co.	Sept. 1941	6	M&S	No sales.			
1,427,000	Richfield Oil Co.	Jan. 1931	5½	J&D	2,800	99½	99	99⅛
9,733,000	Sun Oil Co.	1939	5½	M&S	3,800	101	100¼	100⅝
4,000,000	Transcontinental Oil Co.	Apr. 1930	7	A&O	No sales.			
2,500,000	Warner-Quinlan Oil Co. ...	1942	6	A&O	No sales.			

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Of Interest to Sales Departments

New Use May Result In Enlarged Demand For Paraffin Wax

An increased demand for paraffin wax is indicated in the success which has attended the introduction of paraffin paper milk bottles by one of the large dairies in the East. The use of paraffin paper containers for milk is not new but the type and method of handling which has has been worked out by the eastern dairy has added to the attractiveness of the proposition and many now believe that it will be adopted by other milk dealers in all parts of the country. The bottles are made of spruce paper saturated with wax. The dairy has complete equipment for making the bottles, impregnating them with wax and then bottling the milk. The operation is continuous and when a large production is secured this method of handling is relatively inexpensive.

One important feature of the operation is the method of sealing. The seal is a special rustproof metal which is fastened to the top of the bottle under pressure. The date of pasteurization is stamped on the metal at the time the bottle is sealed.

Many advantages are claimed for the paraffin paper type container. From the standpoint of the consumer it assures the delivery of milk in air-tight bottles, keeping the milk fresh.

From the dairyman's viewpoint the new bottle gets away from the inconvenience and expense of the glass bottle. Delivery weight is greatly reduced, a motorcycle with sidecar being able to handle as many bottles as a large wagon with milk bottles. The milkman is not bothered by picking up empties and the bottle cleaning operation at the dairy is eliminated.

DAMP WEATHER NOT AN AID TO AUTO DRIVING

Many motorists are under the impression that automobile engines function more efficiently in damp weather than on dry days, but this idea is erroneous, it was pointed out by Arthur W. Gardiner of the General Motors Corp. research laboratories, in an address delivered at the annual meeting held at Detroit by the Society of Automotive Engineers in January.

Tests made under standard laboratory conditions show that engine power decreases with increasing humidity of the air, and that a large increase in spark advance is required to obtain best power at high humidity. Similarly, in damp air the spark advance for incipient detonation may be considerably increased, compared with dry-air conditions.

What happens is that under conditions of high humidity the combustion rate is slowed up, resulting in apparently smoother engine operation, which the car owner is likely to mistake for improved power. In spite of this, however, water vapor is relatively ineffective in suppressing detonation.

A further indication of the influence of humidity on engine operation is the fact that approximately 8 per cent more heat is dissipated through the radiator when the air is dry than when its relative humidity is 100 per cent.

OPPORTUNITY FOR COAL DEALERS IN INCREASING FURNACE OIL USE

By Frank E. Fiske

The rapidity with which the oil heating industry has grown and developed in America within the past two years has brought coal and other fuel dealers face to face with a problem of great importance, not only to them, but to the oil heating industry as well. And the problem was this:

Should the coal dealer consider the new oil heating process as a competitor and fight its constantly growing popularity? Or, . . .

Should the coal dealer accept this new arrival as an additional part of his business, and capitalize on its possibilities?

After all, one group argued, the average coal dealer was not necessarily a merchant for any one particular kind of fuel, but rather a dealer in all fuel. Therefore, why should he not give his customer the benefit of the same kind of efficient service on fuel oil as had been given on coal, wood, coke or anything else included in his line of wares?

There existed also, however, another group of coal men who were not enthusiastic about installing the equipment necessary to take care of this new development. Oil seemed to them to be a stepchild which was being forced upon them by a lot of unpopular relatives—in this case, the oil men.

For a while the controversy raged within the coal business, with both sides scoring many points, but with neither side conceding victory to the other. The result was that some of them added oil to their list, while others continued on the old scale. But progress seldom permits obstacles to stand in its way for very long.

As oil burners were improved, the use of this new mode of heating rapidly gained popularity. Particularly was this true in the large apartment buildings, office buildings and other places where an automatically controlled temperature proved essential to the health and general comfort of many thousands of people. The demand for oil burners among individual home owners was slower to materialize, but nevertheless just as damaging to the coal dealer when it did arrive.

The coal dealers who realized the possibilities in the sale of fuel oil saw their volume of business continue to grow. When customers of years standing abandoned the older methods of heating and took on the new way, these dealers were in the position of being able to furnish them with the same kind of satisfactory service they had been accustomed to. As a matter of fact, these dealers found that the delivery of fuel oil offered greater possibilities for efficiency, and, therefore, greater financial returns than some of the other fuels they were handling. But still, a large number of coal dealers remained adamant and continued to fight oil rather than adopt it.

In the final analysis, there seems to be no practical reason why a coal dealer should not become a fuel dealer. When the automobile graduated from a pleasure vehicle to a necessity, the oldtime buggy builder who was on his toes abandoned the old for the new, and began to build automobile bodies. The best testimonial to the wisdom of this movement is the millions which have been made and are being made in this line of endeavor.

Brewster & Locke, of New York; Durham, of Philadelphia; Judkins, of Merrimac, Mass.; and probably most notable of all, General Motors, are all companies which graduated from the buggy building stage to what they are today.

It might be interesting to recall that in 1903 what is now General Motors was known as The Durant-Dort Carriage Works, and later The Flint Wagon Works. W. C. Durant was its president, at a salary of $25 per week. The same situation applies to every other new product that a fickle yet progressive public demands.

There is the example of the radio, electric refrigerator, the washing machine and countless others. And in nearly every case, the dealer in products which preceded these new innovations adjusted his business to meet the new demands made upon it. That is, the successful ones did.

According to figures compiled by the Oil Heating Institute, 422,700 oil burners were in domestic use in the United States on January 1, 1929. This figure covers the number of oil burners in operation in private homes and small apartment houses. Based on figures compiled by the United States Bureau of Mines in its national survey of fuel oil distribution, in co-operation with the American Petroleum Institute, it is estimated that 988,596,000 gallons of oil will be consumed in 1929 by oil burners for domestic use. On January 1, 1929, 33,500 oil burner installations were in operation for commercial heating, i.e., in large apartment buildings, office buildings, theaters, schools and similar structures. It is estimated that 777,000,000 gallons of oil will be used for this commercial heating. Of all the oil consumed in the United States in 1928 it is estimated by the Oil Heating Institute, that 9.90 per cent was used on oil heaters. Of this amount, 4.99 per cent was used for domestic heating, and 4.91 per cent for commercial heating.

MIDWEST TO INSTALL NEW MOTOR OIL PROCESS

DENVER, Colo., Mar. 16.—The Midwest Refining Co. (Standard Oil Co. of Indiana) has appropriated $600,000 to be expended on the construction of new units and for additional storage at its No. 3 plant at Casper in connection with the installation of a new process for the production of improved type of motor oils from Salt Creek crude. This action followed extensive tests and investigations by Midwest experts to determine the particular qualities in which each of the leading lubricating oils is superior and the development of a process which will combine the most desirable features of the different types.

The improved plant is to have a capacity of about 9,000,000 gallons annually of the new type of motor oil base. This quantity can be produced from 10,000 bbls. per day of Salt Creek crude. Present crude oil production of the company is ample for the requirements and no additional runs from Salt Creek will be made on account of the installation of the process. The quantity of crude required will be diverted from other stills.

ILLINOIS GASOLINE TAX

CHICAGO, Mar. 16.—The Senate has passed the measure placing a tax of 3 cents on all gasoline sold for use in automobiles in the State. It now goes to the House.

TESTS FOR GASOLINE AND ALCOHOL MIXTURES

WASHINGTON, D. C., Mar. 16.—At Pernambuco, Brazil, tests were recently made to show the relative performance of alcohol mixtures and gasoline used in automobiles. These tests were made with a new American car, over the same course in each case, and 750 cubic centimeters of fuel were used for each test, reports Commercial Attache Carlton Jackson, Rio de Janeiro.

A combustible manufactured in Alagoas, consisting principally of alcohol, carried the car 3,600 meters, while a similar fuel from South Africa took it 2,800 meters.

With pure alcohol the car went 3,200 meters, while a local mixture of alcohol, ether and gasoline (proportions not stated) took it 3,100 meters. Straight gasoline carried it 4,100 meters.

Analysis of the results showed that the cost of propelling the car 1 kilometer was 104 reis with the Alagoas mixture, 117 with alcohol and 156 with gasoline. (The Brazilian reis is quoted as par at about $0.00012.)

Objections were brought forward to the use of alcohol, such as the gumming of valves and cylinders, "knocking," production of smoke and the high ignition point and viscosity.

LOUISIANA TAX ON OIL TO U. S. SUPREME COURT

WASHINGTON, D. C., Mar. 16.—In the case of the Carson Petroleum Co. against Leon C. Vial, sheriff and tax collector, an issue has been raised before the Supreme Court of the United States upon the applicability of a Louisiana property tax to oil purchased in other states and owned by the Carson company. In this case the oil in question is for export only and is sent to St. Rose by a subsidiary of the Carson company to be loaded on ocean-going oil tankers. However, the respondent contended that if a particular train load had been shipped to St. Rose bound for a definite consignee the State of Louisiana could not have taxed it, but when the interstate journey ends in the State and the oil is in possession of the petitioner he contended they are in no better position than any other shipper within the State who has articles for export. During the process of accumulation the oil is just as subject to taxation as any other personal property within the State.

EXPECT LARGE INCREASE IN FURNACE OIL DEMAND

More than 600 companies in the United States are now engaged in the manufacture of oil burners, of which slightly more than 100 are listed by Underwriters Laboratories, according to a report just issued by the Oil Heating Institute. The large majority of oil burner sales are made by about 50 of these companies. About 10,000 dealers are required for the distribution of the production of these companies, says the institute.

The report also states that a total of 17,000,000 bbls. of oil were consumed during 1928 by the 422,700 burners now in operation in American homes, and the institute estimates that the consumption for the current year will reach 23,538,000 bbls. The total fuel oil consumption for heating commercial buildings and large apartment houses last year reached 16,750,000 bbls., and the estimate for 1929 is 18,500,000 bbls. The average consumption of oil by the domestic burner is 50 bbls. a year, while the commercial burner consumes an average of 500 bbls. annually.

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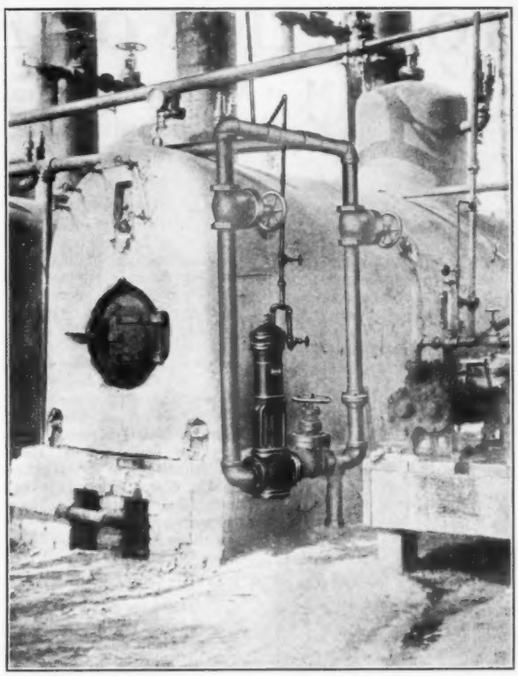

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Properties of Aviation-Engine Oils

Must Meet Summer and Winter Requirements. Manufacturing Methods Changing Due to Necessity of Dewaxing Paraffin Oils

By E. R. Lederer and F. R. Staley*
Texas Pacific Coal & Oil Co.

The phenomenal growth of the aviation industry is demanding a larger supply of lubricating oils of higher grade each year. The manufacture of an oil that best meets the requirements for an airplane type of powerplant presents many problems to the petroleum chemist and technologist. Oil consumption and stability are important considerations because of the severe service which the oil

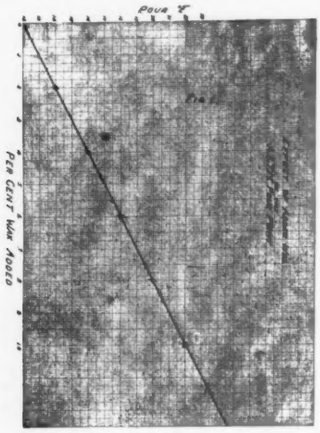

Figure 1—Effect of added wax on the A.S.T.M. pour point.

must undergo. Furthermore the long distances traversed and the great altitudes encountered within a comparatively short time often necessitates starting and operating under widely different temperature and pressure conditions.

Selection of the proper crude is an important consideration in the manufacture of aviation engine oils. The three general classes of petroleum are known as asphalt base, paraffin base and mixed base crudes. The physical and chemical properties of the third class approach either those of the paraffin or the asphalt base, depending upon the relative content of these two substances present in the crude petroleum. Scientific research and actual performance tests during the last two years have demonstrated the advantages of paraffin base oils over asphalt base oils for aviation engines, and their superiority is now conceded by most authorities.

Until recently the pour point of the average commercial paraffin base oil of suitable viscosity for aviation use was too high because of the wax content; but during the last year much attention has been given to the dewaxing and the fractionating of lubricating oils by the refineries in this country and this has resulted in an improvement in their quality and in their unrestricted use as "all-weather aero oils."

Summer and Winter Oils

In his article on "Lubricants for Aircraft Engines,"[1] Commander E. E. Wilson, United States Navy, former head of the engine section, Bureau of Aeronautics, Navy Department, states that the Navy needs an oil which will meet both summer and winter requirements. The Bureau of Aeronautics invited the manufacturers of the petroleum industry to co-ordinate their efforts with those of the Navy Department. To quote Commander Wilson:

The Navy purchases two grades of aviation lubricating oil, known as "summer" and "winter" grades. The matter of starting a cold engine is one of the controlling factors of choosing lubricating oils for aircraft engines. If an oil could be found with a very low pour point and a viscosity of over 90 seconds at 210 degrees Fahrenheit, we could reduce the varieties of oil required from two to one and use the same oil the year round. This desirable solution is of more than ordinary interest to the Navy.

The Bureau of Standards approached the problem in a scientific way by plotting the logarithm of viscosity against the logarithm of temperature and establishing a coefficient of viscosity by determining the ratio of the logarithm of viscosity at 100 degrees Fahrenheit to the logarithm of viscosity at 130 degrees Fahrenheit. The results of this plot are shown in the chart attached, from which it will be seen that, for both light and heavy oils, the naphthene base oils show a much steeper curve than do the paraffin base oils. In other words, paraffin base oils seem more suitable for our purposes.

In their paper on "Motor Oil Characteristics and Performance at Low Temperatures,"[2] Wilkin, Oak and Barnard showed the advantages of wax-bearing oils over asphaltic oils on account of their relatively small temperature viscosity coefficient. Quoting from the paper, their work shows:

Definitely the necessity for both low temperature coefficient of viscosity and low pour test in lubricants to be used at low temperatures. . . . An oil with both characteristics is the ideal for low temperature operation.

At present, our knowledge of the laws of plastic flow is limited and much research work remains to be done along

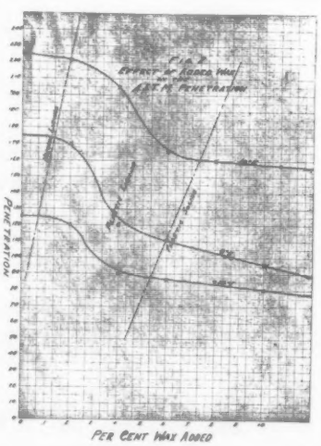

Figure 2—Effect of added wax on the A.S.T.M. penetration.

these lines. Many different types of apparatus to test the fluidity or consistency of lubricating oils have been developed for studying the behavior of lubricating oils below their pour points, but no specific apparatus has as yet been standardized by the petroleum industry. Below its pour point, an oil is not a true viscous liquid; hence the extension of the viscosity-temperature curve below the pour temperature does not picture its behavior.

Oil Characteristics Defined

As defined by the American Society for Testing Materials:

Viscosity of a liquid is the measure of its resistance to flow. It is measured in terms of a unit of force designated as "poise." The fundamental characteristic of a true viscous liquid is that its rate of flow through a capillary is directly proportional to the pressure applied.

Fluidity can be defined as the reciprocal of absolute viscosity in poises (Herschel); . . . or, in a broader sense, fluidity merely refers to the mobility of

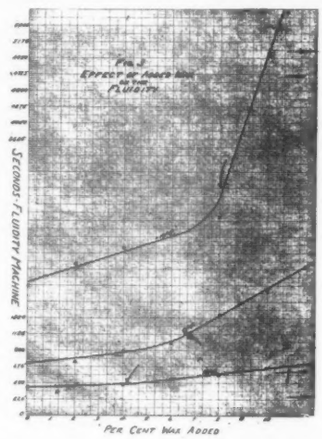

Figure 3—Effect of added wax on the fluidity.

the oil in the engine without considering the force-flow ratio.

Consistency is that property of a material by which it resists permanent change of shape and is defined by the complete force-flow relation. In nonturbulent flow, if this relation is linear, the material is said to be fluid; otherwise, it is plastic.

Plasticity is that property of a material by which, as the shearing stress is lowered, it resists permanent change of shape relatively more than in the case of a fluid; hence, for a plastic material, the ratio of flow to force is not constant.

The fluidity or consistency of aviation engine oils below their A.S.T.M. pour points and the significance of dewaxing paraffin-bearing oils are the main subjects of this paper. In the case of wax-bearing lubricating oils we have to deal with a two-phase system below the cloud point, since, at this temperature, the wax begins to precipitate from the liquid. The quantity of wax present in a given oil, as well as the nature of the wax, whether crystalline or amorphous, determines the cloud point and the pour point.

Analyses of Test Data

Figure 1 shows the effect on the A.S.T.M. pour point of the addition of wax to a partly dewaxed paraffin base oil. This is a straight-line relation. The wax added was some of the same that was taken out in the dewaxing process. It should be noted that a small addition of wax makes a marked change in the pour test of the oil so that, in dewaxing to obtain a zero pour point oil, the refiner is dealing with small quantities of wax at temperatures below 15 degrees Fahrenheit.

The three curves in Figure 2 represent the behavior of an oil at three different temperatures: +10, zero and —10 degrees Fahrenheit. The tests were made with an A.S.T.M. grease penetrometer. The effect of the wax becomes more pronounced at lower temperatures. As the temperature of a wax-bearing oil is reduced, the consistency changes from that of a viscous to that of a plastic liquid and, finally, to a plastic solid. Figure 2 can be divided into three zones which show the three states of the oil. It should be noted that, by reduction of the wax content from 0.73 to 0.53 per cent or 0.20 per cent, the temperature at which the oil changes from a plastic liquid to a plastic solid is reduced from +10 to —10 degrees Fahrenheit, a difference of 20 degrees, and that, as shown in Figure 1, the difference in pour point is only 2 degrees Fahrenheit. This illustrates the importance of wax removal for low temperature operation.

The great reduction in the temperature at which the oil changes to a plastic solid by a relatively small reduction in the wax content helps to explain why the break away torque in cranking is as much as 50 per cent greater for a partly dewaxed oil than for a similar oil of lower pour point, even though the effort required to continue the piston motion is the same for the two paraffin oils. The oil is a plastic solid as the piston breaks away, becomes a plastic liquid as the motion continues and finally becomes a viscous liquid.

Fluidity Machine

The apparatus used in this work is shown in diagrammatic form in Figure 3. It consists of a modified viscosimeter immersed in a bath capable of reducing the temperature of the oil to —30 de-

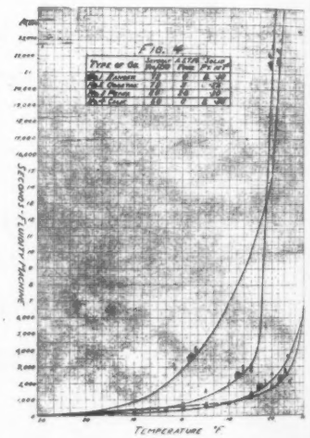

Figure 4—Comparative fluidity of three kinds of Grade 1 aero oil and a California oil.

The tabulation shows the viscosity, the A.S.T.M. pour points and the temperatures at which the oils cease to flow under a pressure of 7 pounds per square inch.

No.	Type—	Saybolt sec. at 210° F.	A.S.T.M. pour point	Solid pour test at 7 lbs per sq. in.
1	Ranger	78	0	*-30
2	Coastal	78	5	*-35
3	Pennsylvania	80	20	*-30
4	California	60	0	*-30

*Below.

grees Fahrenheit. The oil tube was made pressure tight so that air pressure could be applied. The temperature was taken by a low temperature A.S.T.M. cold test thermometer, the bulb of which was immersed near the orifice. All determinations in this machine were made under a pressure of 7 pounds per square inch. The temperature was slowly reduced and the time in seconds, as measured by a stop watch, required to deliver 60 c.c. of the oil, corrected to a temperature of 60 degrees Fahrenheit, was determined at the various temperatures. The quantity of oil delivered was weighed and its volume calculated from its specific gravity.

In Figure 3 the effect of adding wax

(Continued on Page 164)

*Mr. Lederer is vice president and director, and Mr. Staley is chief chemist, Texas Pacific Coal & Oil Co., Fort Worth, Tex. The paper was presented at annual meeting of Society of Automotive Engineers.

[1]The Oil and Gas Journal, November 5, 1925, page 158.

[2]See S.A.E. Journal, February, 1928, page 213.

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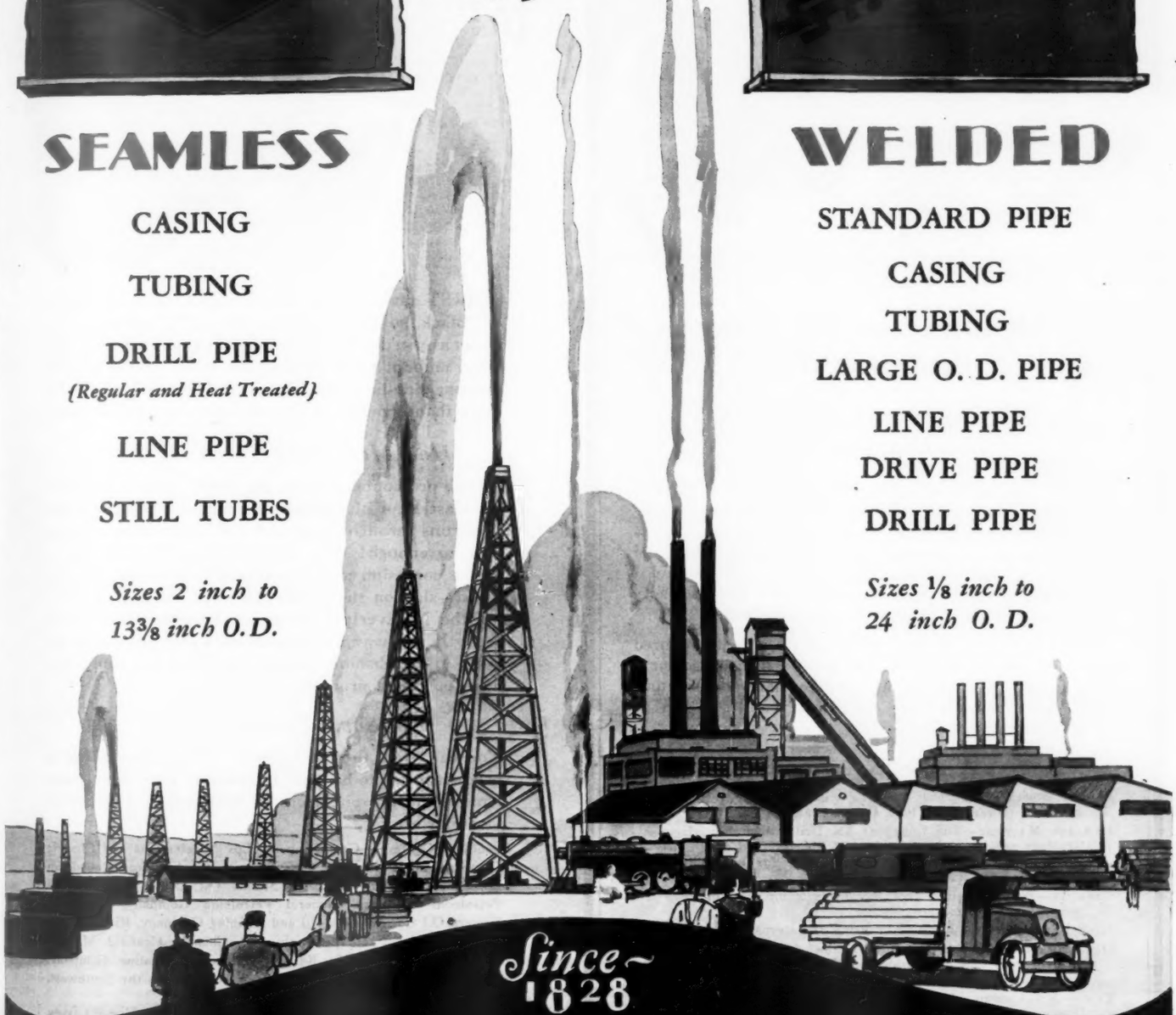

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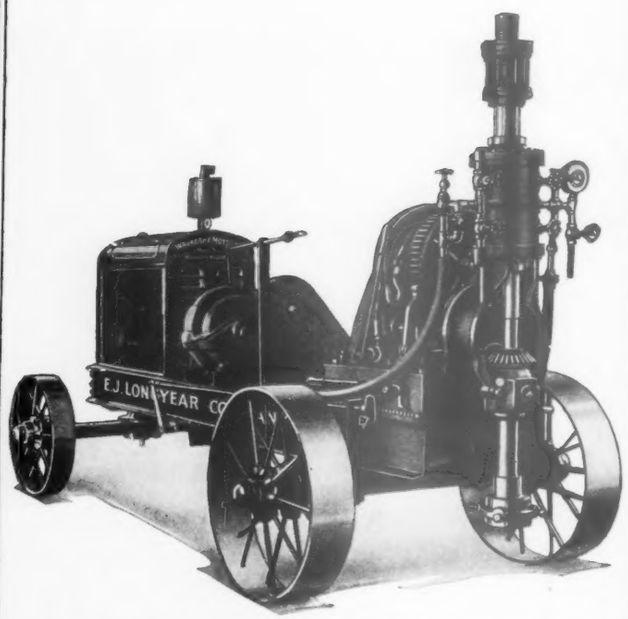

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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

First Reports for Week Ending March 6

Hartley County

Canadian River Gas Co.'s No. 11 Lee Bivins-A, at the C of the SW of Section 38, Block 20, C.S.S. Survey.

Hutchinson County

Amarillo Oil Co.'s No. 2 Ida Ingerton-A, 1,650 feet south and 1,071 feet west of the NE cor. of Section 41, Block 47, H.&T.C. Survey.

Moore County

Barnsdall Oil Co.'s No. 1 Etta Harrison, 330 feet south and east of the NW cor. of the S half of the NE of Section 5, Block M-2, G. Gober Survey.

NORTH CENTRAL AND WEST TEXAS

Archer County

Gulf Production Co.'s No. 4 H. L. Ward and others, 450 feet north and east of the southwest corner of the B.B. B.&C. Survey, A-36. F. H. Gohlke's No. 1 L. F. Wilson-B, 105 feet north and 150 feet west of the southeast corner of the south 23.5 acres of Section 25, Wilson's Geraldine Subdivision. Pandem Oil Corp.'s No. 1 Mrs. A. B. Wallace, 150 feet south and east of the northwest corner of the east 30 acres of the north 70 acres of the A. B. Wallace 156-acre tract in Section 11, Denton County School Land, League 3, A-117. Rathke Oil Co.'s No. 7 L. F. Wilson-A, 200 feet south and east of the northwest corner of Lot 533, Geraldine Subdivision.

A. T. Wolf & Son's No. 1 John Nitschke, 150 feet north and east of the SW cor. of Section 27, Denton County School Land, League 4, A-114. T. Harris and others' No. 3 John E. Roller estate, 550 feet south and 200 feet east of the northwest corner of the north 60 acres of the W. C. Watts Survey, 4-1,115. Humble Oil & Refining Co. and Fain-McGaha Oil Corp.'s No. 1 W. J. Logan-A, 50 feet north and 1,770 feet west of the most southerly southeast corner of the J. M. Taylor Survey, A-650, being 150 feet north and 1,770 feet west of the southeast corner of their 160-acre tract.

Madden & Clark's No. 1 H. M. Anderson, 150 feet south and 210 feet west of the NE cor. of Section 8, B.B.B.&C. Survey, A-981. Moran Drilling Co.'s No. 1 J. M. Bloodworth, 150 feet south and 2,335 feet east of the northwest corner of the M. Cartwright Survey, A-60. Prairie Oil & Gas Co.'s No. 26 J. T. Richardson-B, 150 feet south and 750 feet east of the northwest corner of their lease "B" out of Section 1, South Anderson Ranch Subdivision. May-Camp Drilling Co.'s No. 3 H. O. Prideaux, 750 feet north and 150 feet west of the southeast corner of the east 105 acres of the north 210 acres of the east 410 acres of the A. Rohus Survey, A-240.

Comanche County

Texas Pacific Coal & Oil Co.'s No. 2 Frank Kirk, 660 feet north and east of the SW cor. of Section 18, Deaf & Dumb Asylum Land.

Cooke County

Kewanee Oil & Gas Co.'s No. 8 R. J. Timmis-A, 775 feet south and 150 feet west of the northeast corner of their 80-acre lease "A" out of the E.T.R.R. Survey No. 5, A-363.

Kewanee Oil & Gas Co.'s No. 9 R. J. Timmis-A, 1,100 feet south and 150 feet west of the northeast corner of their 80-acre lease "A" out of the E.T.R.R. Survey No. 5, A-363. Same company's No. 10 R. J. Timmis-A, 1,400 feet south and 150 feet west of the northeast corner of their 80-acre lease "A" out of the E.T. R.R. Survey No. 5, A-363. Shell Petroleum Corp.'s No. 4 H. L. Dennis, 472 feet north and 150 feet east of the southwest corner of their 47-acre lease out of the T. J. Hutchinson Survey, A-484.

Eastland County

A. Atwood and others' No. 2 Maud Simmons, 1,350 feet south and 150 feet east of the NW cor. of Section 27, McLennan County School Land, League 2. Teatsorth and others' No. 1 Victory Harbin, 150 feet south and west of the NE cor. of the SE of the NE of Section 9, Block 4, H.&T.C. Survey. Texas Pacific Coal & Oil Co.'s No. 4 R. W. and J. M. Higginbotham, 350 feet south and 3,550 feet east of the NW cor. of Section 53, Block 4, H.&T.C. Survey.

Erath County

P. B. Goodwin and others' No. 1 Liberty School Lot, 300 feet north and 100 feet east of the southeast corner of the W. B. Cary 199-acre tract out of the J. M. Espinosa Survey, being 300 feet north and 100 feet east of the southwest corner of the Liberty School Lot.

Fisher County

White Eagle Oil & Refining Co.'s No. 1 Neva Hughes, 4,942 feet south and 560 feet west of the northeast corner of the Thomas Cosby Survey No. 220.

Howard County

Amerada Petroleum Co. and Rycade Oil Corp.'s No. 8 Dora Roberts, 1,116 feet north and 1,022 feet west of the SE cor. of Section 128, Block 29, W.&N. W.R.R. Survey. Cosden & Co.'s No. 3 Dora Roberts-C, 1,520 feet north and 600 feet west of the SE cor. of Section 128, Block 29, W.&N.W.R.R. Survey. Empire Gas & Fuel Co.'s No. 3 H. R. Clay, 1,315 feet north and 1,570 feet west of the SE cor. of Section 127, Block 29, W.&N.W.R.R. Survey. Marland Production Co.'s No. 4 Otis Chalk-C, 330 feet south and 990 feet west of the NE cor. of Section 140, Block 29, W.&N.W.R.R. Survey.

Jones County

P. K. French's No. 1 J. T. Leeson, 150 feet north and east of the SW cor. of the E half of the NW of Section 31, Block 14, T.&P. Survey. Grisham-Hunter Corp.'s No. 1 A. G. Hester, 330 feet north and east of the SW cor. of the E half of Section 12, Louis Kratz Survey No. 335, A-247. The Texas Company's No. 2 W. E. Camp, 2,829 feet north and 323 feet west of the southeast corner of the W. E. Camp 189.5-acre tract out of Section 13, Block 19, T.&P. Survey.

Loving County

Lockhart & Co.'s No. 1 J. J. Wheat-H, 990 feet southwest of the northeast line and 990 feet northwest of the southeast line of Section 85, Block 33, H.&T.C. Survey.

Nolan County

C. M. Root and others' No. 1 Lon Martin, 330 feet north and east of the SW cor. of the NW of Section 30, Block 19, T.&P. Survey.

Palo Pinto County

Gordon & Gholson's No. 1 J. Tkecz, 1,800 feet south and 2,600 feet east of the NW cor. of Section 45, Block 1, T.&P. Survey. Ashe Syndicate's No. 2 J. B. Hart, 330 feet south and east of the NW cor. of the NW of the SE of Section 29, Block 3, T.&P. Survey.

Pecos County

C. Evans' No. 1 Pecos Valley Oil Co., 2,310 feet southeast of the northwest line and 990 feet northeast of the southwest line of Section 36, Block 3, H.&T.C. Survey. S. Geyer and others' No. 1 B. F. Smith, 1,320 feet south and west of the NE cor. of Section 8, Block 145, T.&St.L. Survey. Imperial Oil & Gas Co.'s No. 1 Pecos Valley Oil Co., 990 feet northwest of the southeast line and 1,650 feet northeast of the southwest line of Section 22, Block 10, H.&G.N. Survey.

Mid-Kansas Oil & Gas Co.'s No. 26 I. G. Yates-A, 1,312 feet north of the most southerly north line and 1,388 feet east of the most westerly east line of Section 32, Block 194, G.C.&S.F. Survey and located in the I. G. Yates Survey, A-8,195. J. D. Omara's No. 1 L. L. Byrne, 2,490 feet northeast of the southwest line and 1,470 feet southeast of the northwest line of Section 54, Block 10, H.&G.N. Survey. The California Co.'s No. 2 M. A. Smith, Lease 5 (Section 16), 200 feet south and 1,550 feet east of the NW cor. of Section 16, Block 194, G.C. &S.F. Survey.

Shackelford County

Big State Oil Co.'s No. 7 Russ-Webb, 450 feet north and west of the SE cor. of the NE of Section 22, Block 11, T.&P. Survey. Hughes and others' No. 1 Will

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Huber, 450 feet southeast of the northwest line and 150 feet northeast of the southwest line of Section 593, T.E.&L. Survey. Midland Oil Co.'s No. 1 W. Y. and R. A. Davis, 150 feet south and east of the NW cor. of the E half of the SW of Section 20, Block 13, T.&P. Survey. Ohio-Texas Oil Co.'s No. 1 J. B. Matthews-B, 450 feet north and west of the SE cor. of the SE of the NW of Section 29, Block 10, E.T.R.R. Survey.

Roeser & Pendleton's No. 37 W. I. Cook-A, Section 61, 1,937 feet north and 3,073 feet east of the SW cor. of Section 61, Block 10, E.T.R.R. Survey. Same company's No. 38 W. I. Cook-A, Section 61, 2,350 feet north and 1,896 feet east of the SW cor. of Section 61, Block 10, E.T.R.R. Survey. Same company's No. 39 W. I. Cook-A, Section 61, 1,090 feet north and 560 feet west of the SE cor. of Section 61, Block 10, E.T.R.R. Survey. Same company's No. 40 W. I. Cook-A, Section 61, 150 feet north and 597 feet east of the SW cor. of the SW of Section 61, Block 10, E.T.R.R. Survey.

Sedgwick Oil Co.'s No. 18 J. S. Dennis, 1,656 feet north and 300 feet west of the SE cor. of Section 15, Lunatic Asylum Land. Simms Petroleum Co.'s No. 7 H. A. Lones, 1,355 feet south and 1,000 feet east of the NW cor. of Section 64, Block 11, T.&P. Survey.

Tannehill and others' No. 1 L. H. Hill, 200 feet north and east of the SW cor. of the NW of Section 2, Lunatic Asylum Land. Texas Consolidated Oil Co.'s No. 6 J. A. Isbell-B, 150 feet southeast of the northwest line and 150 feet southwest of the northeast line of the northwest 41.3 acres of the southwest 142.8 acres of Section 818, T.E.&L. Survey. Young Brothers & Alexander's No. 1 J. B. Matthews, 150 feet south and 1,470 feet west of the northeast corner of the J. M. Strader Survey.

Stephens County

Lone Star Gas Co.'s No. 1 H. B. Henry, 1,200 feet north and 600 feet east of the SW cor. of Section 53, Block 7, T.&P. Survey.

Ward County

J. H. L. Oil Co.'s No. 2 S. F. Hayzlett, 1,100 feet northeast of the southwest line and 220 feet northwest of the southeast line of Section 17, Block 5, H.&T.C. Survey.

Wichita County

C. A. Everets' No. 1 Mrs. M. J. Powell, 750 feet south and 450 feet west of the most easterly northeast corner of the C. Winters Survey A-322. Atlantic Oil Producing Co. and others' No. 1 H. W. Barton-B, 2,100 feet north and 1,100 feet west of the southeast corner of the W. H. Spillers Survey A-258. John W. Caldwell's No. 12 Allen & Kemp, 450 feet south and 150 feet east of the northwest corner of the south half of Lot 10, Block 26, Kemp Wichita Valley Land.

Coleman & Coppock's No. 21 Kemp & Kempner, 450 feet north and 700 feet west of the southeast corner of their 26.66-acre lease out of Block 82, Kemp Wichita Valley Land. E. S. Easton's No. 1 G. B. Ancell, 1,020 feet south and 150 feet west of the northeast corner of the L. C. Gibbs Survey A-390. Hill & Blair's No. 1 Fassett & Tuttle, 400 feet north and 150 feet west of the NW cor. of Section 1, E.T.R.R. Survey, A-76, and located in Section 2, C.T.R.R. Survey A-769.

H. Hines' No. 1 T. L. Burnett and others, 450 feet north and 150 feet east of the SW cor. of the east 25 acres of the SW of the SE of Section 6, S.A.& M.G. Survey, A-464. Humble Oil & Refining Co.'s No. 16 W. H. Taylor, 454 feet north and 750 feet west of the SE cor. of Block 81, Kemp Wichita Valley Land.

Wilbarger County

C. P. Burton's No. 1 W. T. Waggoner-J, 150 feet north and east of the SW cor. of the south half of the NW of Section 9, Block 4, H.&T.C. Survey. R. I. Carter's No. 1 W. T. Waggoner, 150 feet south and east of the NW cor. of the north half of the SW of Section 9, Block 4, H.&T.C. Survey. Melat Oil Co.'s No. 2 W. T. Waggoner-A, 2,790 feet south and 1,470 feet west of the NE cor. of Section 10, Block 4, H.&T.C. Survey. Same company's No. 1 W. T. Waggoner-B, 2,490 feet south and 1,470 feet west of the NE cor. of Section 10, Block 4, H.&T.C. Survey.

J. E. McKanna, agent's, No. 6 W. T. Waggoner-B, 507 feet north and 205 feet east of the SW cor. of Section 32, Block 4, H.&T.C. Survey. J. O'Neil and others' No. 1 Parker & Colbert, 150 feet north and east of the SW cor. of the SE of Section 8, Block 3, H.&T.C. Survey. Wells and others' No. 1 W. T. Waggoner, 150 feet south and east of the NW cor. of the SE of the SE of Section 9, Block 4, H.&T.C. Survey.

Winkler County

Southern Crude Oil Purchasing Co.'s No. 6 T. G. Hendrick T-88-K, 2,200 feet south and 1,650 feet west of the NE cor. of Section 41, Block 26, School Land. Same company's No. 3 T. G. Hendrick T-88-O, 440 feet south and 330 feet west of the NE cor. of Section 28, Block 26, School Land. Same company's No. 8 T. G. Hendrick T-88-U, 1,320 feet north and 1,650 feet west of the SE cor. of Section 41, Block 26, School Land. Same company's No. 9 T. G. Hendrick T-88-I, 2,200 feet north and 1,650 feet west of the SE cor. of Section 41, Block 26, School Land. Same company's No. 6 T. G. Hendrick T-89-J, 2,200 feet south and 330 feet west of the NE cor. of Section 9, Block B-12, School Land.

Young County

O. Bratcher's No. 2 J. C. C. Edwards, 1,050 feet south and 150 feet west of the NE cor. of the J. C. C. Edwards 100-acre tract out of the S. Tynes Survey A-274. O. Bratcher's No. 2 E. R. Prideaux, 150 feet south and 450 feet east of the NW cor. of the north 25 acres of the south 43 acres of the west 80 acres of the E. R. Prideaux 126-acre tract out of the S. Tynes Survey, A-274.

Casey & Graham's No. 1 A. L. Porter, 62 feet northeast of the SE cor. and 150 feet northwest of the SE line of the W. Cantwell Survey A-1,393. King Royalty Co.'s No. 24 G. Stewart, 1,400 feet south and 3,250 feet west of the NE cor. of the D. Dawson Survey A-76. W. B. Stafford's No. 1 J. C. Dailey, 3,700 feet north and 6,105 feet east of the SW cor. of the S. Tynes Survey, A-274.

Steed & Goss' No. 1 F. Loftin, 150 feet north and east of the SW cor. of the NE of the NE of Section 2, C.T.R.R. Survey, A-2,158. Hinson & Tidwell's No. 3 J. I. Grantham, 1,470 feet south and 1,670 feet west of the NE cor. of the E. J. Riddle Survey, A-1,353. Pandem Oil & Gas Co.'s No. 1 J. L. Rhodes and others, 160 feet north and 314 feet east of the SW cor. of the J. L. Rhodes and others 28.5-acre tract out of the J. Edleman Survey, A-1,728.

Corrections

In Archer County: C. B. Long and others' No. 1 George Knight, 150 feet south and east of the NW cor. of the east half of Block 70, Kemp's Wichita Valley Lands.

Williamson and others' No. 5 R. L. Eddington, 1,070 feet south and 500 feet east of the NW cor. of the R. L. Eddington 512-acre tract out of the Robert Mitchell Survey No. 141.

In Brown County: Young Brothers-Alexander & Woodley Petroleum Co.'s No. 22 Roy Hickman, 750 feet south and 150 feet east of the NW cor. of their 80-acre lease out of the Thomas Benson Survey No. 783.

In Coleman County: Morrison-St. John and Simms Petroleum Co.'s No. 1 A. E. Young, 2,744 feet south and 1,652 feet west of the NE cor. of the B. F. Greer Survey No. 192, being 150 feet north and 450 feet west of the SE cor. of Lot 17.

Morrison & St. John's No. 1 Young Brothers, 1,844 feet north and 600 feet west of the SE cor. of the B. F. Greer Survey No. 192, A-223, being 600 feet south and west of the NE cor. of Lot 1. Schermerhorn Oil Co. and others' No. 2 L. V. Eddington, 975 feet north and 2,660 feet east of the SW cor. of the Victoria County School Land, No. 187, being 975 feet north and 20 feet east of the SW cor. of Lot 38. White Eagle Oil & Refining Co.'s No. 1 L. V. Eddington, 2,253 feet south and 327 feet east of the NW cor. of the Victoria County School Land Survey No. 187, being 327 feet north and east of the SW cor. of Lot 28.

In Wichita County: R. M. Waggoner's

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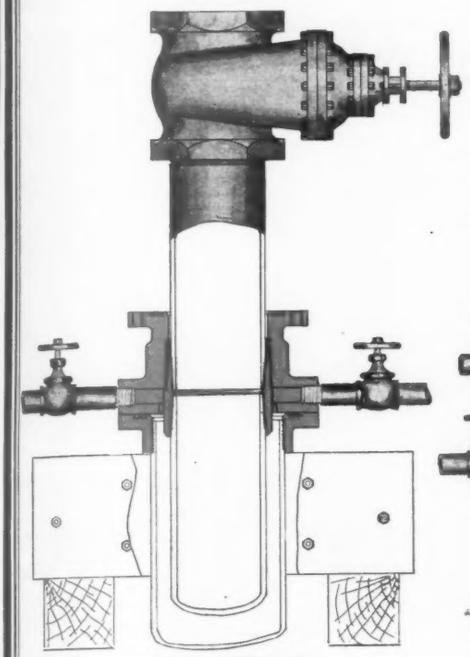
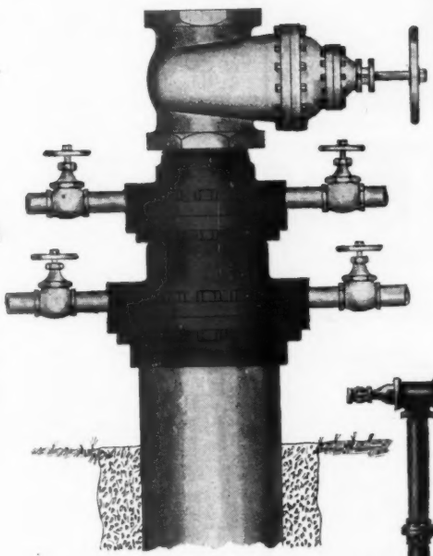
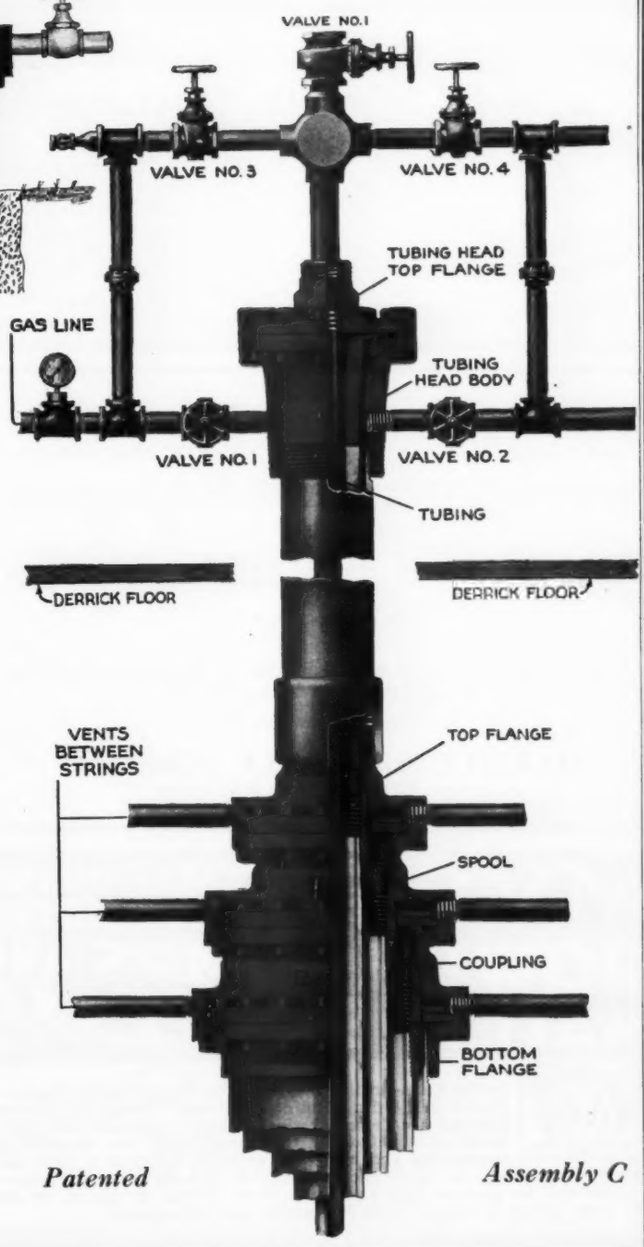


Assembly A



Assembly B



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Assembly C

Various Hook-ups to Meet Your Conditions

The views on this page show various methods of installing Regan Control Head. Assembly A for instance, shows a popular method of leaving a spool flange up when completing the well. This permits the running of another string of pipe after the well is completed, making it unnecessary to release the tension of the last string set. Assembly B shows the Regan Control Head with the regular Santa Fe top flange up, connected directly to valve. Assembly C shows a completed hook-up with the Regan tubing-head installed complete with fittings for air or gas lift.

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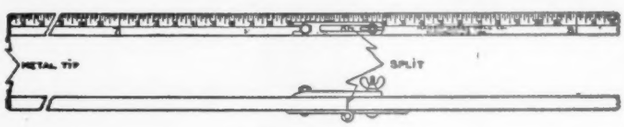

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No. 1 J. L. and T. J. Waggoner, 200 feet north and 500 feet west of the NE cor. of the G. L. Nance 894.8-acre tract out of the Sam Q. Fowler Survey A-78, and located in Section 11, B.S.&F. Survey, A-387.

In Wilbarger County: C. P. Burton and others' No. 1 W. T. Waggoner-I, 1,830 feet north and 2,430 feet east of the SW cor. of Section 40, M.E.&P. Survey.

PROPERTIES NECESSARY IN AVIATION MOTOR OILS

(Continued from Page 158)

to a partly dewaxed oil is shown by running the samples at three different temperatures in the fluidity machine. The oil used was made from paraffin base Ranger crude, the wax added being some of that taken out in the Sharples dewaxing process. From the shapes of the curves it will be noted that the wax content of the oil becomes more apparent at low temperatures.

Figure 4 shows the comparative fluidities of three kinds of Grade 1 aero oils and an oil produced from a California crude. Curve No. 4 shows the fluidity of a California naphthene base oil of 60 Saybolt seconds viscosity at 210 degrees Fahrenheit. It is shown merely as a representative oil from this type of crude and is below the viscosity range of the three other oils shown. The Pennsylvania oil, No. 3, having a pour point of 20 degrees Fahrenheit, shows a better fluidity than the asphalt base oil, No. 2, having a 5 pour point, while the paraffin base Ranger crude, No. 1, having a zero pour point, shows the best fluidity curve. The A.S.T.M. pour points of these oils are shown at the right of Figure 5, as are also the temperatures at which the oil ceases to flow under a pressure of 7 pounds per square inch.

Figure 5 shows a similar series of curves for Pennsylvania and Ranger paraffin base and for Coastal oils having viscosities corresponding to Grades

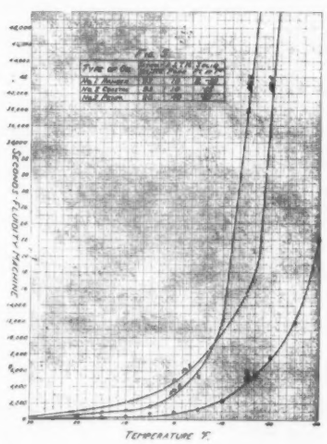

Figure 5—Curves showing comparative fluidities of Grades 2 and 3 aero oils made from asphalt-base and paraffin-base crudes.

The curves are similar to those of Figure 5, the viscosities corresponding to Grade 2 aero oil. The tabulation shows the viscosity, the A.S.T.M. pour points and the temperatures at which the oils cease to flow under a pressure of 7 pounds per square inch.

No.	Type—	Saybolt sec. at 210° F.	A.S.T.M. pour point	Solid pour test at 7 lbs per sq. in.
1	Ranger	93	10	*—30
2	Coastal	93	10	—25
3	Pennsylvania	90	40	—25

*Below.

2 and 3 aero oil. The pour point of the Pennsylvania oil, No. 3, is high, being 40 degrees Fahrenheit, and is therefore incompletely dewaxed. The pour point on the Ranger and the Coastal oils, Nos. 1 and 2, is +10 degrees Fahrenheit. The curves show that the fluidity of the Pennsylvania oil is better than that of the Coastal oil to —9 degrees Fahrenheit, at which point the curves cross. This is due to the wax content. The Ranger oil having a pour point of 10 shows a better fluidity than either of the two other oils.

Figure 6 shows a series of fluidity curves for oils from various crudes corresponding to Grade 4 Liberty aero oil. For this work three different oils from Pennsylvania crude are shown. Their pour points, are +20, +15 and +35 degrees Fahrenheit. The Ranger oil having

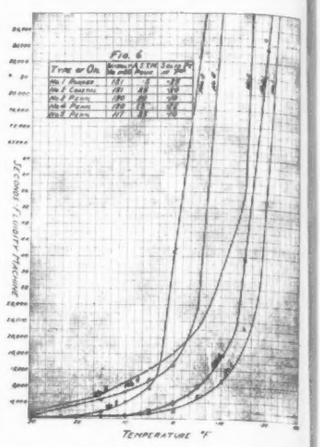

Figure 6—Fluidity curves for oils corresponding to Grade 4 aero oils.

The tabulation shows the viscosity, the A.S.T.M. pour points and the temperatures at which oils cease to flow under a pressure of 7 pounds per square inch.

No.	Type—	Saybolt sec. at 210° F.	A.S.T.M. pour point	Solid pour test at 7 lbs per sq. in.
1	Ranger	121	5	—25
2	Coastal	121	25	—20
3	Pennsylvania	120	20	—10
4	Pennsylvania	120	15	—25
5	Pennsylvania	117	35	—10

a 5 pour point shows the best fluidity curve; Pennsylvania No. 4, with a pour point of 15, follows closely. Curves Nos. 3 and 5 represent partly dewaxed oils and show better fluidity than the asphalt base oil to +3 in one case, and —3 degrees Fahrenheit in the second case. Curve No. 3 crosses Curve No. 5 at 4 degrees Fahrenheit above zero, although the pour point of No. 3 sample is at 20 degrees Fahrenheit and that of No. 5 is 35 degrees Fahrenheit. This can be explained by the nature of the wax; a crystalline wax will show a different behavior at low temperatures than does an amorphous wax.

Oil Consumption

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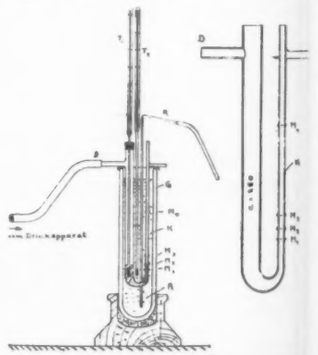

Figure 7—Vogel apparatus for determining the true temperatures at which an oil begins to flow after it has been solidified.

cal properties. In general, paraffin base oils show higher flash and fire tests, and consequently lower volatility, than do asphalt base oils. The flash test is an indication of the volatility of an oil. There are several other laboratory tests designed to show volatility or evaporation loss, but the most satisfactory way

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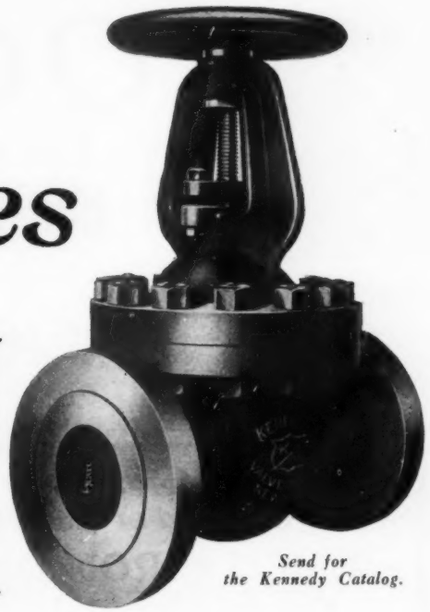

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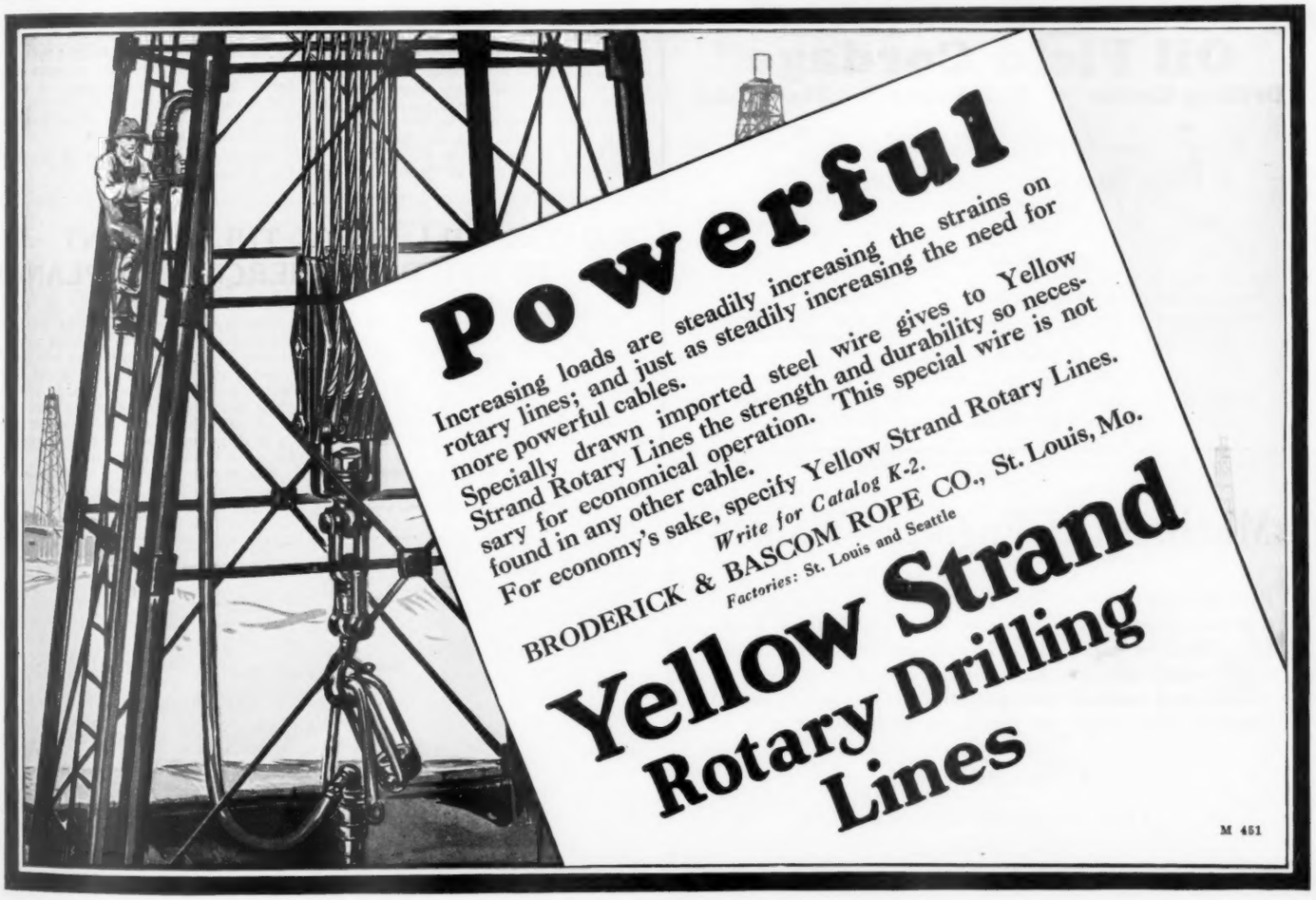

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Specially drawn imported steel wire gives to Yellow Strand Rotary Lines the strength and durability so necessary for economical operation. This special wire is not found in any other cable.

For economy's sake, specify Yellow Strand Rotary Lines.

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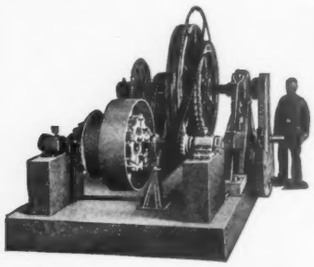
Factories: St. Louis and Seattle

Yellow Strand Rotary Drilling Lines

M 451



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Permanent position, college graduate, to act as Construction and Maintenance Engineer for a 10,000-barrel refinery. Must be experienced in refinery construction and repair work and must have designing ability. Young or middle-aged married man preferred. Give full personal history in first letter and attach recent snap-shot.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma.

is to measure the oil consumption in actual flight tests.

The methods used to refine the crude oil will affect the properties and performance of the finished oil. This is especially true of the distillation process used. The oil may be a continuous chain of closely fractionated hydrocarbons of progressive boiling points as they originally occur in the crude, or it may be a blend of a bright stock and a neutral oil, which usually shows a lower flash point and a higher volatility than any unblended oil. The oil consumption will vary with the viscosity of the oil used.

The United States Government specifications for Liberty aero oils have three viscosity ranges; namely, Grade 1, 75 to 85; Grades 2 and 3, 90 to 100; and Grade 4, 115 to 125 Saybolt seconds at 210 degrees Fahrenheit. In this country, Grades 3 and 4 are most widely used for air-cooled engines.

Stability in Service

Sludge and carbon formation due to oxidation and decomposition are detrimental to good lubrication. An excessive quantity of either may cause engine failure or at least make frequent overhauling necessary. The carbon residue test is a laboratory method which indicates carbon formation in service. The solubility of the oil in sulphuric acid denotes the sludge-forming tendencies of the oil and indicates the grade of purity to which the oil was refined.

As in the study of oil consumption, most large consumers of oil make actual flight tests over an extended period and thoroughly inspect the engine when it is taken down to determine the amount of carbon formation and the sludging effects. Poor mechanical and operating conditions of the engine may cause decomposition of even the best oils in service.

Other Methods of Testing

The behavior of oils at temperatures below their pour point is very complicated and, although there are many types of instrument for studying their behavior, no method has as yet been standardized. The present A.S.T.M. pour test is no indication of the behavior of an oil at low temperatures. Check tests on the same oil by the same observer or by different testers using the same method show large discrepancies, proving that results are influenced by the individual skill of the tester and the manner and the speed of cooling the oil.

Complications arise in the case of paraffin-base oils because of the wax structure and the wax content of the oil. The process of determining the pour point of an oil by cooling is subject to criticism, especially in the case of oils containing crystalline wax. This is because the oil may be undercooled or shockchilled, which does not allow sufficient time for the formation of crystalline wax. The oil also contains amorphous wax; so it is possible to obtain a pour point lower than the actual solidification point of the oil. This difference is due to variation in operation.

Dr. H. Vogel of Hamburg, Germany, has developed an apparatus, shown in Figure 8, and a method for determining the true temperature at which an oil begins to flow after it has been solidified. Doctor Vogel's theory is that the temperature at which a paraffin lubricant passes from the solid into the liquid state can be determined accurately. His procedure is virtually a reversal of our pourpoint determination. He preheats the oil to 50 degrees Centigrade (122 degrees Fahrenheit), cools it first to room temperature and then, in an alcohol bath to which he adds solid carbonic acid, further to —30 degrees Centigrade (—22 degrees Fahrenheit.) By applying the pressure of a 60-c.m. column of water, he observes the temperature at which the oil surface in the U-tube rises. The mean temperature of the oil and of the alcohol bath, at this point, is the true flowpoint of the oil. With the aid of this apparatus it is also possible to observe the actual fluidity of an oil near its true flowpoint and at low temperatures, by determining the viscosity in centipoises at such temperatures.

[3]See Erdol und Teer, vol. 3, No. 33.

FATAL GLYCERIN EXPLOSION

BOLIVAR, N. Y., Mar. 16.—Charles Mansfield, 33, of Bolivar, N. Y., was killed and the automobile in which he was transporting 600 quarts of nitroglycerin from Emporium, Pa., to Bolivar, was demolished when the explosive let go between Emporium and Keating Summit, some 40 miles south of here.

The blast rocked the district for miles around, tore up concrete pavement and left a large hole in the earth. A single button of his jacket was all that was found of Mansfield. No visible parts of the car could be located.

Mansfield was employed by the Bolivar Torpedo Co.

WILCOX WILL ERECT TULSA PLANT TO BUILD COMMERCIAL AIRPLANES

H. F. Wilcox, president of the Wilcox Oil & Gas Co., Tulsa, is making preparations to join the list of oil men who are directly interested in the manufacture of airplanes. With associates, Mr. Wilcox expects to build a plant at Tulsa and start the manufacture of airplanes of a type shown in the accompanying picture.

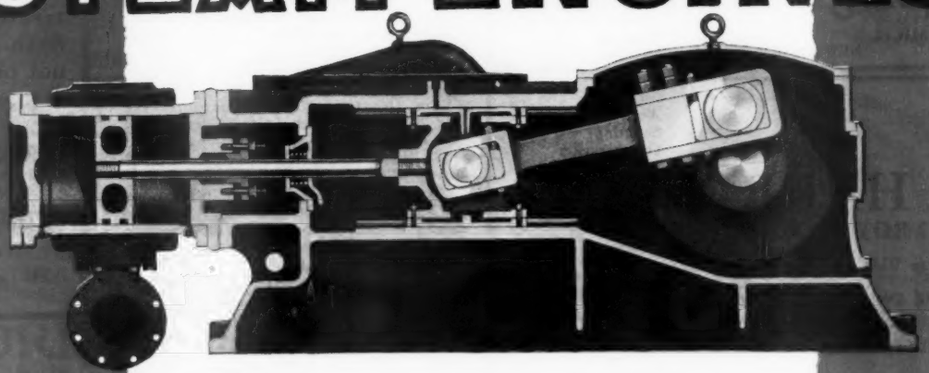
The airplane shown was recently purchased by the Wilcox company for use in the company's production and marketing departments. The plane which is the first of its type to be built was designed by W. S. Collier who will be interested in the manufacturing company. Mr. Wilcox became interested in the airplane before the construction was completed and his decision to build the plane on a commercial scale followed successful tests in several flights.

The model shown in three-passenger type monoplane. The company will manufacture several models.

Airplane of Wilcox Oil & Gas Co.

TITUSVILLE

TWIN CYLINDER ROLLER BEARING STEAM ENGINES



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For quick starting, stopping or reversing—for a steady flow of power at all times, the Titusville Twin Cylinder has never had an equal.

And now added to the time-tried dependability of the open type Titusville Twin Cylinder Engine is the further refinement of a protective housing which completely encloses the new Titusville Twin Cylinder Engine. This gives it the distinctive advantages of the splash system of lubrication resulting in a greater oil economy and a positive, automatic lubrication found in no other type of steam drilling engine. Furthermore, no dirt, sand or other foreign matter can get into the crankshaft, which is equipped with Timken Roller Bearings.

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In heavy duty pump and engine service P.P.P. rod packing proves its worth by its long, trouble-free operation. It holds cylinders tight under highest pressures and keeps rods smooth and easy running.

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Bentonite Nuisance May Be Reduced as a Result of 500 Tests

Bentonite clays are likely to lose some of their ability to plague the oil well driller as a result of about 500 tests made by the Bureau of Mines and described in a publication just issued by the Superintendents of Documents, Washington, D. C. Bentonites cause trouble through their remarkable affinity for water. It has been found that lubricating oil, kerosene or gasoline may be used with good results in place of water in the wet drilling of oil wells through bentonite beds. The addition of quantities up to 2 per cent of any of several soluble salts markedly decreases the swelling produced when bentonites are treated with water, according to a statement issued by the Department of Commerce, which also points out some of the losses caused by the swelling of bentonite.

Clays of the bentonite type occur in Wyoming, California, South Dakota, Arizona, Montana, Utah, Texas, Idaho, Tennessee and New Mexico. They are the result of disintegration of volcanic material. The familiar antiphlogistin of the drug store, commonly used to reduce swellings, is made from bentonite, some kinds of which absorb almost 10 times their volume of water. The statement of the Department of Commerce regarding bentonite, which is treated fully in the Bureau of Mines technical paper No. 438, "Bentonite, Its Properties, Mining, Preparation and Utilization," follows:

"In drilling wells for oil or other minerals water is generally used. If bentonite is encountered the drilling water causes the bentonite to swell and form a sticky mass which flows into the hole. As more water is mixed in, the mass becomes less viscous and finally results in a permanent suspension. There is continuous transition from the stiffest paste to the most mobile suspension, all dilutions being capable of holding other minerals in suspension. If oil is present bentonite promotes the formation of water-in-oil emulsions, which may be either very viscous or practically solid. In any case bailing is very difficult and tedious. The sides of the hole may swell, heave, and cave and may result in the collapse of casing. Prevention of the swelling of bentonite encountered in drilling is therefore an important problem.

Tests Made With Solutions

"To obtain data on the effect of different solutions of bentonite and on clay-like material that might cause difficulty in wet drilling about 500 tests were recently made by the Bureau of Mines in co-operation with the Mackay School of Mines, University of Nevada. Tests were made with various solutions that might be used commercially to aid in wet drilling. These tests showed that the addition of quantities up to 2 per cent of any one of a number of soluble salts markedly decreases the swelling produced when bentonites are treated with water.

"The tests developed the fact that lubricating oil, kerosene, or gasoline could be used to replace water in wet drilling through bentonites, to prevent swelling and breaking down; however, water would have to be excluded to prevent the formation of emulsions. Cheap salts could be used to form dilute solutions that would cut down the swelling of bentonites in water considerably, but they would probably not prevent caving. Apparently, the addition of a large amount of these salts would prevent detrimental action of the solutions on bentonite.

"For some bentonites sodium chloride evidently gives satisfactory results; other bentonites, however, become soft in a saturated solution of this salt, indicating breaking down and caving of the walls of wells being drilled. Bentonies that become soft in saturated sodium chloride solution may remain firm in a solution of some other common salt, so drilling difficulties caused by bentonite may be overcome in almost all cases."

Treating Plant Quickly and Cheaply Installed

Using equipment already on the lease, you can soon arrange a plant for treating any quantity and any variety of "cut oil" with—

Tret-O-Lite

There is no heavy investment. Sufficient treating capacity for flush production does not penalize the operator at a later period.

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In the Oil and Gas Fields

Our metallurgists are men who have had first hand experience in the Oil Fields. They have studied the performance of Oil Well Tools under the most trying conditions. Asco Steel is being produced to meet these conditions and the increasing demand has proven all that we claimed for it.

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For accurate, easy and quick Punching of the Bolt Holes.

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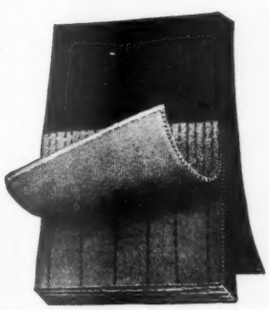

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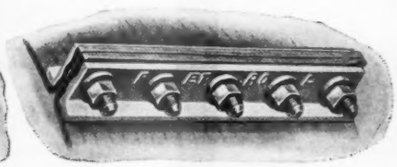

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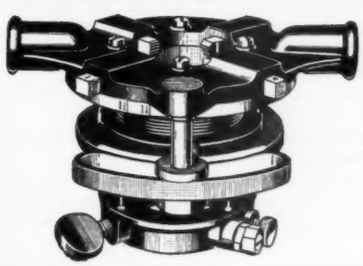

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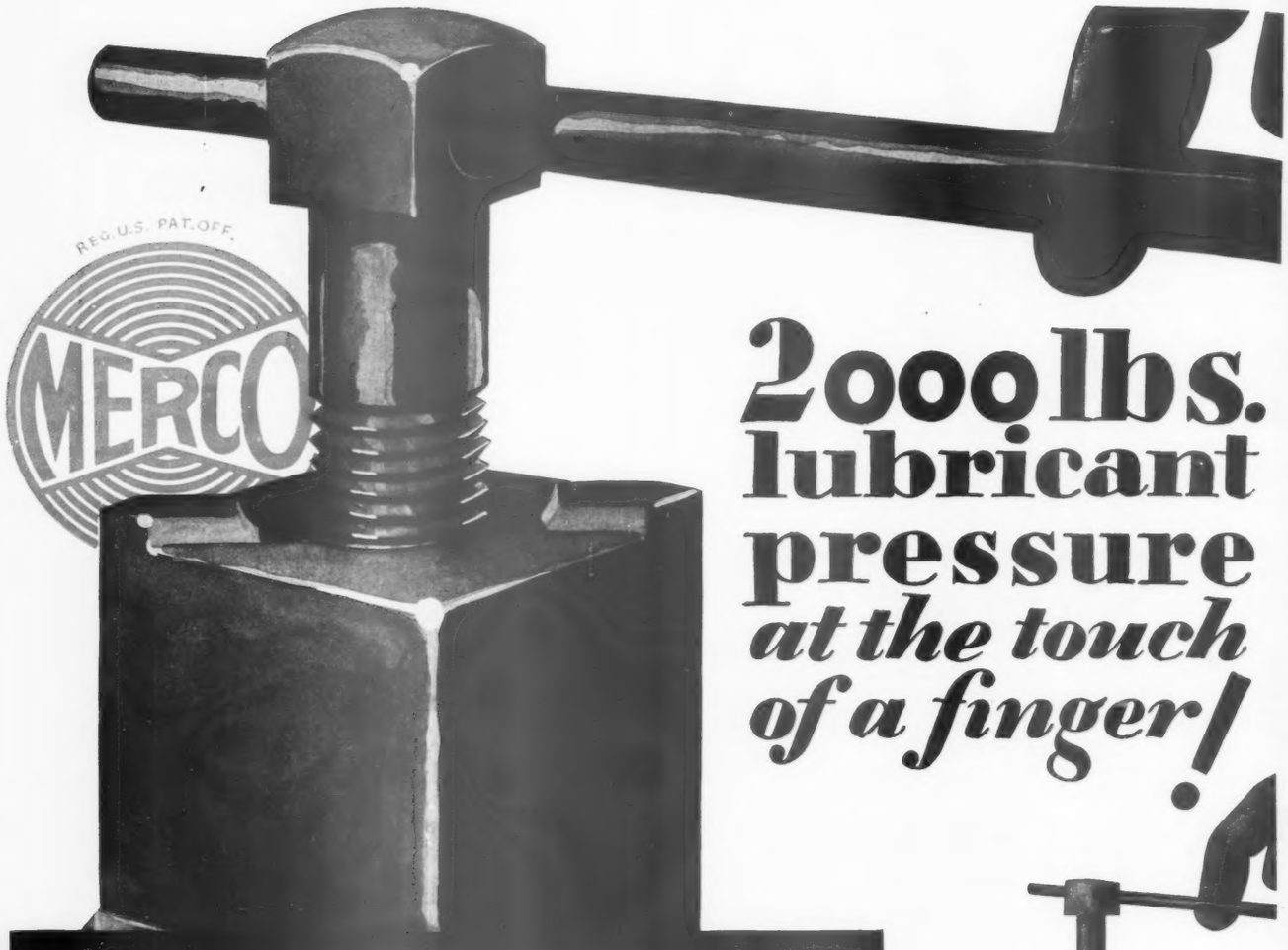

2000 lbs. lubricant pressure *at the touch of a finger!*

THE LUBRICANT *PREVENTS* LEAKS AND KEEPS THE VALVE FROM STICKING

A slight turn of the lubricant screw on the Nordstrom Valve produces hydraulic pressure up to 2,000 pounds per square inch. This pressure forces lubricant around the plug, positively preventing leaks and entry of foreign matter.

The same operation automatically exerts upward pressure on the plug and releases it should it ever become tight.

Whether operated once or a thousand times, Nordstrom Valves won't leak and are easy to turn.

Nordstrom Valves are manufactured in various types depending upon the size of the valve and the service for which they are intended. All, however, have the efficient and patented Nordstrom method of lubrication.

Nordstrom Valves are in use in many services in the Producing, Refining and Distributing branches of the Petroleum Industry. Among these services are: concentrated sulphuric acid and caustic, pump manifolds, boiler blow-offs, gas fuel lines, manifolds, "Christmas Trees," loading racks, etc.

Our new Catalog No. 6 fully illustrates and describes the advantages of Nordstrom Valves for use in the Petroleum Industry. *Ask for it!*

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"Merco" Lubricants used in Nordstrom Valves are available in many types and are suitable for a wide range of valve services.

Nordstrom Valves

Detailed Operations in All Fields for Month of February

SUMMARY OF ALL FIELDS
Wells Completed

	Comp.	Prod.	Dry	Gas
Eastern	357	2,112	29	43
Lima	11	121	3	2
Central Ohio	93	822	27	37
Michigan	35	5,912	14	1
Kentucky	113	2,032	42	7
Tennessee	3	60	1	0
Indiana	4	5	1	2
Illinois	11	96	7	0
Kansas	101	8,876	40	10
Oklahoma	259	71,834	75	32
North Central Texas	266	11,399	127	8
East Central Texas	8	1,450	7	0
East Texas	7	0	0	7
West Texas	115	354,069	28	2
Texas Panhandle	34	6,414	6	5
Gulf Coast	99	36,200	37	1
Southwest Texas	106	19,381	48	13
North Louisiana	26	120	13	10
Arkansas	27	1,180	15	2
Montana	11	520	1	2
Wyoming	7	2,664	1	1
Colorado	11	807	5	0
New Mexico	21	165	15	4
Utah	0	0	0	0
Mississippi	4	0	4	0
Total February	1,729	526,239	546	189
Total January	1,739	531,227	537	185
Difference	10	4,988	9	4

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Eastern	115	361	476
Lima	6	15	21
Central Ohio	79	143	222
Michigan	101	71	172
Kentucky	23	167	190
Tennessee	1	16	17
Alabama	2	7	9
Mississippi	4	25	29
Indiana	3	37	40
Illinois	2	14	16
Kansas	70	214	284
Oklahoma	167	880	1,047
North Central Texas	87	446	533
East Central Texas	6	14	20
East Texas	8	18	26
West Texas	49	304	353
Texas Panhandle	33	125	158
Gulf Coast	34	207	241
Southwest Texas	39	181	220
North Louisiana	43	80	123
Arkansas	12	55	67
Montana	28	95	123
Wyoming	22	138	160
Colorado	20	75	95
New Mexico	24	64	88
Utah	4	30	34
Total February	982	3,782	4,764
Total January	967	3,777	4,744
Difference	15	5	20

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carter	6	259	1	..
Creek	29	1,577	7	6
Grady	10	200	4	4
Kay	5	105	2	2
Kiowa	7	25	6	..
Muskogee	11	285	5	..
Okfuskee	8	690	3	1
Okmulgee	11	72	4	2
Osage	22	6,198	4	1
Pontotoc	11	4,205	2	..
Pottawatomie	45	47,377	5	1
Seminole	35	9,590	11	3
Stephens	12	785	4	..
Wagoner	7	13	1	4
Miscellaneous	40	453	16	8
Total Feb.	259	71,834	75	32
Total Jan.	302	107,386	113	21
Difference	43	35,552	38	11

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Beckham	1	10	11
Carter	3	23	26
Creek	12	66	78
Grady	1	3	4
Grant	..	10	10
Hughes	2	11	13
Kay	..	13	13
Kiowa	1	16	17
Logan	5	21	26
Muskogee	6	32	38
Oklahoma	7	20	27
Okfuskee	8	29	37
Okmulgee	8	29	37
Osage	13	37	50
Pawnee	2	13	15
Payne and Lincoln	4	15	19
Pontotoc	8	23	31
Pottawatomie	29	160	189
Seminole	36	235	271
Stephens	8	29	37
Wagoner	3	9	12
Miscellaneous	10	76	86
Total Feb.	167	880	1,047
Total Jan.	169	865	1,034
Difference	2	15	13

CARTER COUNTY
23-1s-2w E. Gill, Magnolia Pet. Co. 2. 33
16-4s-2w Walker, E. M. Boring et al 5. dry
13-1s-4w Bell, Magnolia Pet. Co. 5 84
14-1s-3w Pollock, Magnolia Pet. Co. 3.. 70
Archer, Magnolia Pet. Co. 1.. 47
33-1s-3w Choens, Magnolia Pet. Co. 3.. 25

Wells completed 6
Production 259
Dry 1

CREEK COUNTY
7-19- 7 Kelly, Shaffer O. & R. Co. 1.. 125
16-19- 7 Manuel, Anderson et al 1..... 50
18-19- 9 Sewell, H. U. Bartlett 1-A.... gas
8-18- 7 Musselman, Magnolia Pet. 23.. 15
13-18- 8 Deere, Anthony Wayne 1..... dry
20-17- 7 Coachman, Twin State Oil 5.. 60
13-17-10 Fulsom, Pontiac Oil Co. 11.... 7
2-17-11 McComas, J. E. Wallace 2.... gas
3-17-11 Sapulpa, Jackson & Wise 3... dry
5-16- 8 Emarthia, Magnolia Pet. 5... 75
7-16-12 Unallotted, Continental Oil et al 1 ..... dry
24-15- 9 Childers, Madden & Madden 1 125
10-14- 9 Taylor, Transcontinental Oil 1 dry
17-14-10 Johnson, Hall & Donnelly 1.. dry
20-17- 7 Coachman, Prairie O. & G. 7. 50
7-19- 9 Tohkaney, Dixie Oil Co. 5.... gas
4-18-12 Grayson, Baker & Lynch 2... gas
6-17- 7 Derrisaw, Magnolia Pet. Co. 1 15
9-14-10 Unallotted, C. G. Tibbins 2.... 30
30-17- 7 Jackson, Silurian Oil Co. 1... dry
10-14-10 Ramsey, Gray Oil Co. 2..... dry
20-17- 7 Coachman, Prairie O. & G. 6. 80
31-18-11 Goat, H. H. Taylor et al 1.... gas
4-18-12 Jackson, C. G. Tibbens 5..... 20
15-17- 7 Stewart, Mid-Cont. Pet. 29... 415
17-17- 7 Tiger, Bengal O. & G. Co. 9.. 300
20-17- 7 Coachman, Twin State Oil 6.. 200
11-17-10 Unallotted, Irelan et al 5..... 10
27-17-12 Boling, Roxaline Oil Co. 2.... gas

Wells completed 29
Production 1577
Dry 7
Gas 6
Gas production 19,500,000

GRADY COUNTY
23-5-8w Sanford, Okla. Gas Utilities 5. gas
24-5-8w Farwell-Smith, Little Nick Oil Co. 1 ..... dry
3-8-4w Dryden, Okla. Gas Utilities 1. gas
11-4-8w Williams, Okla. Gas Utilities 2-A 5
13-4-8w Glover, The Texas Co. 5..... dry
26-4-8w Williams, J. B. Nichlos 1..... dry
8-3-5w Mar-Horton, Carter Oil Co. 2. 195
27-5-8w Glover, Meridian Gas Co. 2... gas
23-5-7w Foster, M. B. Blake 1..... gas
13-4-8w Kerns, Champlin O. & R. Co. 2 dry

Wells completed 10
Production 200
Dry 4
Gas 4
Gas production 44,000,000

KAY COUNTY
18-29-1 Cole, Tidal Oil Co. 2..... 105
8-27-1 Boesch, Nehr, Wilson et al 1. gas
15-27-1 Schmidt, Wilson & Wright 1. dry
28-27-1 Smith, C. A. Leonard et al 1. gas
36-25-1w School land, Ingram & Wilson 1 ..... dry

Wells completed 5
Production 105
Dry 2
Gas 2
Gas production 1,600,000

KIOWA COUNTY
2-6-17w Hamilton, W. C. Adams 1... dry
7-6-16w Hobbs, J. R. Travis 1..... dry
6-6-15w Kello, Johnson McDowell 1.. dry
14-6-15w Petty, Russell & Sloan, Inc. 1 dry
18-6-16w Ditmar, Bridwell et al 1..... 25
10-6-17w Level, Joe Ray 1..... dry
32-6-14w Madden, Russell & Sloan, Inc. 1 ..... dry

Wells completed 7
Production 25
Dry 6

MUSKOGEE COUNTY
8-15-15 Friday, Grubbs & Young 5.... 140
1-14-18 Francis, W. J. Metzger 5..... 30
5-13-16 Flowers, Bement Oil Co. 4... dry
14-13-18 Jordan, Sioux Oil Co. 3..... dry
30-15-15 Durant, H. L. Jolly 1..... dry
5-13-16 Flowers, E. B. George 1-A... dry
18-13-19 Alcorn, J. N. Paschall 1..... dry
29-15-16 Howard, J. Summers et al 1-A 50
34-15-18 Sanders, Gypsy Oil Co. 4.... 20
17-15-17 Lewis, H. E. Williams 2-A.... 30
8-15-15 M. Barnett, C. O. Buckles et al 4 15

Wells completed 11
Production 285
Dry 5

OKFUSKEE COUNTY
23-11-10 Anderson, Pure Oil Co. 1..... dry
12-10-11 Robinson, Atlantic O. P. Co. 3 450
30-12- 9 Barnett, Tidal Oil Co. et al 1.. gas
33-12-11 McCoy, Josey Oil Co. 18..... dry
29-12-10 Fixico, Minnehoma Oil Co. 1... 150
33-12-10 Smith, Darby Pet. Corp. et al 1 dry
11-10-12 Simmons, Atlantic O. P. Co. 5 60
13-10-11 Field, Atlantic O. P. Co. 1.... 30

Wells completed 8
Production 690
Dry 3
Gas 1
Gas production 15,000,000

OKMULGEE COUNTY
20-15-14 C. Lewis, J. A. Swindler 12... dry
13-14-11 Warren, Winemiller Oil Corp. 1 dry
14-14-14 Colbert, J. E. Wallace 5..... 40
16-11-12 Grayson, Moffett & Buckles 2. gas
10-15-14 Rowe, Miller & Moore 4..... 2
27-13-11 Scott, J. H. Rebold Oil Co. 2.. dry
21-13-14 Dunn, Simms Pet. Co. 7..... dry
22-13-14 S. Fox, Aiken Oil Co. et al 2... 10
30-12-12 Rentie, Rounsaville et al 4 ... 15
12-14-14 Adams, C. V. Price 7..... gas
15-13-14 Scott, Star Dev. Co. 6..... 5

Wells completed 11
Production 72
Dry 4
Gas 2
Gas production 2,000,000

OSAGE COUNTY
11-26- 8 Prod. & Ref. Corp. et al 1....1200
22-24- 7 Marland Prod. Co. and Gypsy Oil Co. 1..... 168
Marland Prod. Co. and Gypsy Oil Co. 1..... 698
34-24- 8 Wm. D. Gray 3..... 2743
36-22- 8 Mid-Kansas Oil Co. 3..... 75
27-21-11 Okla. Natl. Gas Corp. 1,661 .. dry
21-25- 6 Prairie O. & G. Co. 1..... 35
34-26- 6 Carter Oil Co. 1..... 239
21-25-12 Phillips Pet. Co. 17..... 15
22-24- 7 Marland Oil Co. and Gypsy Oil Co. 2 ..... gas
17-23-12 Silurian Oil Co. 53..... 10
5-20-11 Pioneer Pet. Co. 8-B..... 30
15-26- 6 Lewis Prod. Co. et al 2..... 200
33-26- 6 Carter Oil Co. 2..... 40
24-26-11 I. T. I. Oil Co. 403..... dry
26-25- 9 Peters Pet. Co. 7..... dry
1-23- 9 A. G. Oliphant 1..... dry
16-21- 9 Clint Moore Estate 1..... 225
30-25- 8 The Prairie O. & G. Co. 3.... 175
11-26- 8 Minnehoma Oil Co. 3..... dry
36-22- 8 Mid-Kansas Oil Co. 4..... 195
L. G. Stanley 5..... 150

Wells completed 22
Production 6198
Dry 4
Gas 1
Gas production 11,000,000

PONTOTOC COUNTY
19-5-3 Perry, Louisiana O. R. Corp. 19. 620
Perry, Louisiana O. R. Corp. 20..1100
19-5-8 Wade, Westheimer & Daube 8... 400
20-5-8 Warffle, Denver P. & R. Co. 1.. dry
19-5-8 Whitney, W. R. Ramsey 4..... 550
1-4-7 Herman, Dixie Oil Co. 1..... 35
19-5-8 Wade, Westheimer & Daube 9... 450
17-5-8 Millner, W. R. Ramsey 5..... 400
29-5-5 Roberts, Ogg Pet. Co. 3..... 50
19-5-8 Perry, Louisiana O. R. Corp. 18.. 600
14-4-7 Norris, Wilcox O. & G. Co. 1..... dry

Wells completed 11
Production 4205
Dry 2

POTTAWATOMIE COUNTY
8-8-5 Smith, Wilcox O. & G. Co. 1.....1142
17-8-5 Wallace, Amerada Pet. and Barnsdall Oil 1..... 880
18-8-5 Miller, Gypsy Oil Co. 1..... 785
19-8-5 Bellars, Sinclair O. & G. Co. 4..1245
20-8-5 Green, Amerada Pet. Corp. 1....1680
23-7-4 McGee, Interocean Oil Co. 3..... 200
25-7-4 Neeley, Sinclair O. & G. Co. 4.... 560
26-7-4 Roseman, Gypsy Oil Co. 2..... 697
27-7-4 Richard, The Prairie O. & G. 1.. dry
20-7-5 H. Youts, Magnolia Pet. Co. 7...1421
29-7-5 Nadash, Sinclair O. & G. Co. 4.... 13
31-7-5 Nicholas, Magnolia Pet. Co. 1.... 194
17-7-4 Latimer, Magnolia Pet. Co. 1.... 252
24-7-4 S. A. Wilbarn, Magnolia Pet. 5.. 212
Blandin, Sinclair O. & G. Co. 5..2130
26-7-4 Thomas, Pure Oil Co. 4..... 4200
Bruno, Sinclair O. & G. Co. 2....1985
1-7-5 Carroll, Magnolia Pet. Co. 1.... dry
28-7-5 T. Fyke "E," Magnolia Pet. Co. 1 73
8-9-5 Knapp, Independent O. & G. 9..1044
30-9-5 Germany, Magnolia Pet. Co. 1.... 28
7-8-5 Bourassa, Gypsy Oil Co. 2..... dry
Bourassa, Gypsy Oil Co. 4..... 137
8-8-5 Wiley, Pure Oil Co. 1.....1395
Wiley, Pure Oil Co. 2.....1413
Wiley, Pure Oil Co. 3..... 758
18-8-5 Miller, Gypsy Oil Co. 2.....3500
Harding, Independent O. & G. 2.2590
17-7-2 Spangler, T. B. Slick 1..... dry
25-7-4 Bruno, McCulloch Oil Co. 4..... 463
30-7-5 Smith, T. B. Slick 2..... 10
1-8-4 Ballard, Amerada Pet. Corp. 1... 940
Hallum, Amerada Pet. Corp. 3... 650
7-8-5 Bourassa, Gypsy Oil Co. 3..... gas
Calvin, The Texas Company 1... 120
Calvin, The Texas Company 3... 365
8-8-5 Billington, Magnolia Pet. Co. 2.. 593
Wiley, Pure Oil Co. 4.....1985
Smith, Wilcox O. & G. Co. 2.... 192
18-8-5 Miller, Gypsy Oil Co. 3.....8470
Billington, Independent O. & G. 1 995
Linger, Skelly Oil Co. and Margay Oil Co. 1.....3708
12-7-4 Gasaway, Magnolia Pet. Co. 1.. dry
26-7-4 Cherry "B," Magnolia Pet. Co. 3. 152
26-7-4 Smith, Tidal Oil Co. 2..... 200

Wells completed 45
Production 47,377
Dry 5
Gas 1
Gas production 48,000,000

SEMINOLE COUNTY
35-10-5 Walker, Tidal Oil Co. 2..... 340
Walker, Tidal Oil Co. 3..... 55
1- 9-5 Mayes, Burke Greis Oil Co. 1... 600
24- 9-5 Moore, Magnolia Pet. Co. 1.... 504
6- 9-6 Shepard, Skelly Oil Co. 3.....1025
Sherry, Skelly Oil and Atlantic O. P. 4..... 278
26- 7-6 Glass, Shell Pet. Corp. 1..... gas
Wood, T. B. Slick 2..... 380
4- 7-7 Harris, Marland Oil and Shaffer O. & R. 1..... 715
9- 7-7 Chilcoat, T. B. Slick 1..... 35
18- 5-8 Nakotche, Sinclair O. & G. Co. 5 25
32-10-6 Varnum, Magnolia Pet. Co. 1... 704
32- 8-7 Walker, W. B. Pine 1..... dry
5- 8-6 Micco, The Prairie O. & G. Co. 1 dry
24- 9-5 Harjo, The Prairie O. & G. Co. 1 340
10- 7-6 Lena, Gypsy Oil Co. 1..... dry
23- 7-6 Eleck, Mid-Continent Pet. Corp. 2 ..... dry
7- 5-8 Amos "B," Sinclair O. & G. 2..1850
32-10-6 Hurford, The Prairie O. & G. 1. dry
27-11-6 Fay, Fuhrman Pet. Co. 1..... dry
1- 9-5 Sango, Gypsy Oil Co. 13..... 82
14- 8-5 Fife, Barnsdall Oil Co. 2..... dry
19- 8-5 Bellars, Sinclair O. & G. Co. 6.. 716
26- 8-6 Hoyecha, W. B. Pine 8..... 405
26- 7-6 Barkus, Barnsdall Oil Co. 1.... gas
11- 5-6 Harjo, T. B. Slick 1..... dry
18- 5-8 Culley, Anderson & Pritchard & Lucy, Burke Greis Oil Co. 3.... 275
19- 5-8 Fleet, I. T. I. Oil Co. 1..... 600
31-10-5 Haer, W. B. Joyce et al 1..... dry
10- 8-6 Strothers "F," Pure Oil Co. 7.. 26
M. Taylor, Sinclair O. & G. Co. 1 310
13- 7-6 M. Harjo, Carter Oil Co. 3..... 325
23- 7-6 Wolfe, Shell Pet. Corp. 1..... gas
18- 5-8 Nakotche, Sinclair O. & G. Co. 2 dry

Wells completed 35
Production 9590
Dry 11
Gas 3
Gas production 134,000,000

STEPHENS COUNTY
12-1 -6w Williamson, Bunn & Marvin 1 dry
12-1s-4w Hanson, Amerada Pet. Corp. 4 50
13-1s-4w Bell, Wirt Franklin Pet. 1.... 60
Bell, Wirt Franklin Pet. 2.... 180
27-1s-8w Taliaferro, Harry Hanbury 8.. 50
3-2s-8w Bush, Ven-Mex Pet. and Mid-Continent Pet. 4..... 150
35-2 -9 Green, Pandem Oil Co. 1..... dry
25-1 -9w Thomas, Magnolia Pet. Co. 2.. dry
14-1s-8w Kukuk, Fisher & Rankin 1.... dry
35-1s-8w Smith, Pace et al 2..... 120
2-2s-8w H. Green, Pace et al 1..... 100
34-1s-8w Simpson, Lone Eagle Oil Co. 8. 75

Wells completed 12
Production 785
Dry 4

WAGONER COUNTY
21-18-17 Childers, McCracken et al 5... gas
34-18-17 Barnett, Horner et al 7..... gas
21-18-17 S. Childers, McCracken et al 7. gas
7-17-18 Rothammer, Cody & Neely 1... dry
36-16-17 Brown, Public Service Corp. 1. gas
22-16-19 Vann, C. F. Finefield 5..... 13
29-18-16 Hawkins, D. T. Marr et al 3... dry

Wells completed 7
Production 13
Dry 1
Gas 4
Gas production 16,250,000

MISCELLANEOUS COUNTIES
Grant County—
2-27-3w Forsythe, Consolidated Gas Util. Co. 1..... gas
Lincoln County—
23-15-6 Pinkston, Shaffer O. & R. Co. et al 1..... dry
35-14-6 Angee, Wilcox O. & G. Co. 2... dry
Logan County—
19-19-4w Rouse "B," Shell Pet. 1-A... gas
Ross "B," Shell Pet. Corp. 1. dry
Pawnee County
14-20-9 Lennex, Thompson & Black 1.. 24
24-20-9 Graham, Superior Oil Corp. et al 1 ..... gas
Payne County—
27-19-4 Miller, Mulberry Oil Co. 1..... dry
6-17-4 Kaufman, Skelly Oil Co. 1..... dry
Comanche County—
30-2-9w Price, Magnolia Pet. Co. 5..... dry
Marshall County—
3-6s-6 Blaylock, Thompson et al 1..... dry
14-5s-5 Johnson, Geo. Bilbo 1..... dry
Caddo County—
5-5-9w Cutshall, Magnolia Pet. Co. 2... 25
4-5-9w McKenna, Caddo Oil Co. 2..... 10
Cotton County—
35-1s-10w McComb, Razor & Akins 1... dry
3-2s-10w Priddy, Cullum & Perkins 5.. dry
Jefferson County—
3-7s5w Seay, Humble O. & R. Co. 1... 137
33-6s-6w Trout, Bridwell Oil Co. 1..... dry
36-6s-6w Seay, Roberson & Woods 1.... dry
3-7s-5w Seay, O. W. Beck 1-A..... 135
Hughes County—
21-7- 8 Street, The Texas Company 1.. 53
27-9-10 Yargee, The Prairie O. & G. 1. gas
7-8- 9 Harjo, Independent O. & G. 1.. gas
Washington County—
17-26-13 Toalson, Wellsville Oil Co. 20.. 2
Toalson, Wellsville Oil Co. 21.. 2
30-26-14 Fee, Rigdon & Bruen 5..... 5
19-27-13 Adams, Tidal Oil Co. 12..... 5
6-27-13 Fowler, Keystone Oil Co. 6.... 2
Craig County—
28-25-18 Bowlin, Reynold Oil & Royalty Co. 12 ..... dry
Rogers County—
20-24-17 Thomas, Wellsville Oil Co. 18.. 10
16-24-16 Miller, Caryell & Marra 1..... dry
20-24-17 Thomas, Wellsville Oil Co. 19.. 5
Thomas, Wellsville Oil Co. 20.. 25
Nowata County—
28-26-17 Hodge, Hollis, Noel & Moore 1 10
4-25-14 Plank, W. S. Tinyman 1..... 3
4-25-17 Halsell, Frieden Bros. 3..... gas
Texas County—
11-1-18ecm Price, Three Way Oil Co. 1. dry
Garfield County—
19-23-3w Garber, Marland Oil Co. 2.... gas
Canadian County—
18-13-10w North, Wirt Franklin Pet. and I. T. I. O. 1..... dry
Sequoyah County—
33-11-25 Powell, Sequoyah Gas Co. 2... gas

Wells completed 40
Production 453
Dry 16
Gas 8
Gas production 107,566,420

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Anderson	7	80	2	..
Butler	6	267	4	..
Chautauqua	13	310	3	1
Cowley	5	200	3	1
Elk	3	50	2	..
Greenwood	8	415	4	..
Montgomery	18	147	6	3
Sedgwick	6	6,380	2	..
Sumner	6	405	3	..
Miscellaneous	29	622	11	5
Total Feb.	101	8,876	40	10
Total Jan.	50	2,977	19	7
Difference	51	5,899	21	3

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Butler	9	16	25
Cowley	8	27	35
Elk	1	13	14
Ellis	3	7	10
Greenwood	7	13	20
Harvey	1	10	11
McPherson	2	7	9
Marion	6	7	13
Russell	3	9	12
Sedgwick	16	65	81
Sumner	1	11	12
Miscellaneous	13	29	42
Total Feb.	70	214	284
Total Jan.	63	284	247
Difference	7	70	63

ANDERSON COUNTY

3-21-21 Kemler, Wm. Mills 1 ..... dry
33-20-21 Nelljhoen, Fred Denton et al 2 dry
23-22-19 Threxton, D. D. Nolan 2 5
Threxton, D. D. Nolan 1 5
27-21-19 Kellstadt, W. S. Fees 10 25
16-23-18 Kivitt, Radio O. & G. Co. 10 ... 15
7-21-21 Mulkey, R. Morrison 23 30

Wells completed 7
Production 80
Dry 2

BUTLER COUNTY

22-27-5 Brandenberger, Empire O. & R. Co. 4-A 142
11-25-4 McNally, Trees Oil Co. 1 ..... dry
31-26-6 Unger, O. V. Paul 1 ..... dry
34-27-5 Linkerson, Empire O. & R. Co. 2 ..... dry
Hutchinson, Empire O. & R. 2-C 125
8-29-5 Kidwell, Empire O. & R. Co. 1 dry

Wells completed 6
Production 267
Dry 4

CHAUTAUQUA COUNTY

34-33-12 St. John, Jas. O'Neil Bruen 2 .. dry
Morton, Denman Bros. 4 2
27-33-12 Riley, Denman Bros. 11 65
18-32-13 Harmon & Finley, H. T. Finley 3 3
12-34-10 Warmbrodt, Big Brother Oil Co. 5 10
28-33-12 Martin, Denman Bros. 5 60
28-33-12 Martin, Denman Bros. 3 100
34-33-12 Morton, Denman Bros. 5 5
33-33-12 Mullendore, Jas. O'Neil Bruen 2 dry
28-33-12 Martin, Denman Bros. 6 5
27-33-12 Riley, Denman Bros. 12 60
32-33-10 Anderson, Hydraulic Oil Co. 6. gas
17-34-12 Looby, The Prairie O. & G. Co. 1 ..... dry

Wells completed 13
Production 310
Dry 3
Gas 1
Gas production 250,000

COWLEY COUNTY

36-32-5 Feaster, Empire O. & R. Co. et al 1 ..... dry
13-34-6 Sillman, Kentucky Gas Co. 1 .. gas
27-31-5 Alspaugh, Slick & Markham 1 .. dry
7-33-7 Barnhart, Kentucky N. & O. Co. 1 ..... dry
24-32-4 Kukuk, J. A. Hull 18 200

Wells completed 5
Production 200
Dry 3
Gas 1
Gas production 1,500,000

ELK COUNTY

10-31-10 Townsite, S. H. Litteral 1 50
15-31-10 Webb, Craft & Hunt 1 ..... dry
27-31-10 Murphy, Wahn et al 1 ..... dry

Wells completed 3
Production 50
Dry 2

GREENWOOD COUNTY

1-25- 8 Claycomb, Nelson Kimmet et al 1 ..... dry
6-25- 9 Claycomb, W. H. Nelson et al 1 ..... dry
29-22-13 Luthi, Simons & Rhodes 3 .. 175
11-23- 9 Green, Chriss Sheedy et al 9 .. 15
35-23-11 Edwards, Syndicate Oil & Phillips Pet. 2 ..... dry
13-24-12 Bonnett, Marshall et al 8 25
18-24-12 Scott, Stark et al 1 ..... dry
11-22-10 Shepherd, Independent O. & G. Co. 9 200

Wells completed 8
Production 415
Dry 4

MONTGOMERY COUNTY

5-34-17 Duckworth, Kedge Oil Co. 6 .. dry
9-34-17 Ducher, W. F. Townsell et al 1 1
33-33-15 Donnebrink, B. Donnebrink 1.. dry
25-33-14 Copeland, Central Oil Co. 1 .. dry
32-33-15 Anderson, Hydraulic Oil Co. 4 .. dry
Dobson, W. G. Cavert et al 5 .. dry
1-34-13 Brown, J. P. Brady 10 ..... dry
2-34-13 Brooks, J. P. Brady 3 10
32-33-15 Anderson, Hydraulic Oil Co. 5 10
11-34-13 Dunham, J. P. Brady 1 40
19-35-15 Atkinson, John I. Harris et al 1 ..... gas
22-33-15 Dobson, W. C. Cavert et al 6 .. gas
11-34-13 Dunham, J. P. Brady 2 5
Brooks, J. P. Brady 1 25
17-34-15 Dobson, Consolidated O. & G. Co. 14 1
32-33-15 Dobson, W. C. Cavert et al 7.. 15
Anderson, Hydraulic Oil Co. 7 gas
2-34-13 Dunham, J. P. Brady 15 40

Wells completed 18
Production 147
Dry 6
Gas 3
Gas production 750,000

SEDGWICK COUNTY

36-25-1w Smyser, La Robb Oil Co. 1 .. 800
16-25-1 Goodrich, Marland Oil Co. 1 ..4100
35-25-1 Froman, Hartman & Skaer et al 1 ..... dry
6-26-1 Fitch, Mary Jane Oil Co. 1 ..1900
1-26-2w Steele, Bu-Vi-Bar Pet. et al 1 dry
7-26-1 Roll, Reynolds & Hays 1 500

Wells completed 6
Production 7380
Dry 2

SUMNER COUNTY

9-30-2w Lutta "B," Champlin O. & R. Co. 5 30
29-34-1w Tuttle, McCulloch Oil Co. 1 .. dry
36-31-2 Bussard "B," Washoma Oil Co. 2 150
14-32-2 Highway, Scholl et al 1 ..... dry
30-34-2 Peters, Marland Oil Co. 1 .... dry
34-34-2 McEwen, The Prairie O. & G. Co. 3 225

Wells completed 6
Production 405
Dry 3

MISCELLANEOUS COUNTIES

Coffey County—
9-22-14 Winzler, Union Gas Co. 1 ..... gas
Morris County—
24-16-9 Cessman, Moseley et al 1 .... dry
Ellis County—
5-12-17w Shutts, Phillips Pet. Co. 1 .. 300
27-11-19w Vine, Marland Oil Co. 1 .... dry
25-12-16w Furthmeyer, Midwest Exp.Co. 36 65
21-13-19w Boettcher, Transcontinental Oil 1 ..... dry
McPherson County—
9-17-2w Nortin, McPherson O. & G. Dev. Co. 1 ..... dry
12-20-2w Wedel, McPherson O. & G. Dev. Co. 1 ..... gas
2-17-1w Deepenbrock, Newman et al 1 dry
17-18-1w Stein, McPherson O. & G. Co. 1 dry
Rooks County—
14-8-16w Poore, Kruger et al 1 ..... dry
Russell County—
7-13-15w Gorham, Stearns & Streeter et al 1 25
4-14-15w Dortland, Wilcox O. & G. Co. 1 60
32-13-15w Mermas, Keys Pet. Co. et al 2 125
Mitchell County—
32-9-7w Abercrombie, Gurley et al 1 .... dry
Linn County—
2-21-21 Gull, Harry Hazlett 1 ..... dry
Labette County—
34-31-17 Fees, P. Steinberger 1 4
Fees, P. Steinberger 2 3
34-31-15 Fees, P. Steinberger 3 5
Fees, P. Steinberger 4 8
3-35-15 Young, John Lindberg et al 7 1
20-34-15 Dobson, John Hebrank 11 2
Bourbon County—
26-24-21 Rodgers, Wm. Kiser et al 1 .. 4
Neosho County—
29-27-20 Rush, John Spielman 1 ..... gas
26-28-19 Horrell, John Jelinek 11 20
Allen County—
18-26-21 Swiggett, Frank J. Pavlicek 3 gas
Cloud County—
6-6-4w Murdock, Concordia O. & P. Co. 1 ..... dry
Marion County—
25-19-3 Schlotthauer, Fred Franks 1 .. dry
17-19-4 Reed, Frank et al 1 ..... gas

Wells completed 29
Production 622
Dry 11
Gas 5
Gas production 8,000,000

WEST TEXAS FIELDS

Wells Completed

County—	Comp.	Prod.	Dry	Gas
Borden	1	.....	1	..
Coke	1	.....	1	..
Crockett	3	130	..	..
Edward	1	.....	1	..
El Paso	1	.....	1	..
Garza	1	10	..	..
Howard	34	20,548	3	..
Jones	7	324	4	..
Loving	1	100	..	..
Irion	1	.....	1	..
Mitchell	1	.....	1	..
Nolan	1	.....	1	..
Reagan	4	475	2	..
Reeves	2	..	2	..
Runnels	2	..	2	..
Taylor	1	..	1	..
Terry	1	.....	1	..
Pecos	7	201,840	1	1
Sutton	1	.....	1	..
Upton	1	54	..	..
Ward	2	.....	1	1
Winkler	41	130,588	3	..
Total Feb.	115	354,069	28	2
Total Jan.	112	315,065	19	..
Difference	3	39,004	9	2

Wells Drilling

County—	Rigs	Drlg.	S.D.	Ttl.
Crane	0	4	0	4
Crockett	0	2	8	10
Fisher	2	6	3	11
Glascock	1	6	1	8
Howard	8	52	4	64
Jones	5	19	3	27
Mitchell	0	4	0	4
Pecos	5	21	10	36
Reagan	10	3	1	14
Runnels	0	2	5	7
Upton	0	2	0	2
Ward	0	4	1	5
Winkler	7	48	12	67
Miscellaneous	11	36	47	94
Total Feb.	49	209	95	353
Total Jan.	75	207	96	378
Difference	26	2	1	25

BORDEN COUNTY

E. A. Hall, Condor Oil Co. 1 ..... dry

COKE COUNTY

Powers, Louisiana O. & R. Co. 1 ..... dry

CROCKETT COUNTY

Powell, Humble O. & R. Co. 10 50
Powell-B, Humble O. & R. Co. 1 70
Sorg, Humble O. & R. Co. 1 10

Completions 3
Production 130

CULBERSON COUNTY

Seay, Deep Rock Oil Co. 2 ..... dry

EDWARDS COUNTY

Schreiner, McMan Oil & Gas Co. 1 ..... dry

EL PASO COUNTY

Malone, Sillex et al 1 ..... abd

GARZA COUNTY

J. M. Boren, Emerald Oil Co. 3 10

HOWARD COUNTY

Dora Roberts, Amerada Pet. Corp. 3 572
H. R. Clay, Hyer & Yates 2 300
Dora Roberts, Magnolia Pet. Co. 5 500
Dora Roberts, Magnolia Pet. Co. 17 200
Otis Chalk, Pure Oil Co. 8 50
Dora Roberts, Ward Oil Co. 4 1800
Dora Roberts, Amerada Pet. Co. 2 750
Dora Roberts, Amerada Pet. Co. 6 1440
Settles-A, American Maracaibo Co. 1 736
Settles-D, Cosden & Co. 2 240
Clay, Dunnigan & Hyer 4 85
Clay, Marland Oil Co. 6 290
Clay-C, Midwest Exploration Co. 1 143
Dora Roberts-E, Moody Corp. 4 ..... dry
Settles, Sun Oil Co. 5 1165
Kloh-Rumsey, Witherspoon et al 1 810
Roberts, Amerada Pet. Corp. 5 2108
Neal, Andrews & McCamey 1 ..... dry
Clay, Dunnigan & Hyer 4 2040
Easton, Group 1 Marland 1 480
Clay, Gulf Prod. Co. 5 120
Hyer & Dunnigan, Clay 2 117
Clay, Marland & Donnelly 1 40
Chalk-C, Marland Oil Co. 115
Abrams, Plymouth Oil Co. 1 1198
Roberts-D, Moody Oil Corp. 1 60
Clay, Donnelly & Marland 1 40
Roberts, Laurel & Cosden 8 1560
Clay, Green Oil Co. 6 75
Roberts, Magnolia Pet. Co. 16 144
Roberts-B, Moody Oil Co. 7 250
Roberts-E, Moody Oil Co. 4 ..... dry
Roberts-E, Moody Oil Co. 9 1440
Roberts-A, Schermerhorn 3 1680

Completions 34
Production 20,548
Dry holes 3

JONES COUNTY

Campbell, Phillips Pet. Corp. 1 30
Pomroy, Phillips Pet. Corp. 2 50
Smith, Roberts Oil Corp. 3 ..... dry
Smith, Independent Oil & Gas Co. 2 .. dry
Smith, Independent Oil & Gas Co. 3. dry
Bickley, Snowden McSweeney 5 244
Bickley, Sinclair Oil & Gas Co. 2 ..... dry

Completions 7
Production 324
Dry holes 4

LOVING COUNTY

Whear, Lockhart & Co. 1 100

IRION COUNTY

Matt Roach, Mertzon Oil Co. 1 ..... dry

MITCHELL COUNTY

Pong, E. P. Campbell 1 ..... dry

NOLAN COUNTY

Pepper, Herbert Oil Co. 1 ..... dry

REAGAN COUNTY

University, Skelly Oil Co. 3 65
University-C, Big Lake Oil Co. 3 ..... abd
University, Big Lake Oil Co. 153 60
University, Big Lake Oil Co. 158 350

Completions 4
Production 475
Dry holes 1

RUNNELS COUNTY

Clayton, McLean et al 1 ..... dry
Brevard, Vacuum Oil Co. et al 1 ..... dry

Completions 2
Dry holes 2

REEVES COUNTY

Kinney et al, D. P. Davis et al 1 ..... abd
Kloh & Rumsey, Dr. Kitsos et al 1 ..... dry

Completions 2
Dry holes 2

SUTTON COUNTY

Allison, Nantz et al 1 ..... dry

TAYLOR COUNTY

Amyx, Burnham et al 1 ..... dry

TERRY COUNTY

Brownfield, Superior Oil Co. 1 ..... dry

PECOS COUNTY

I. G. Yates-B, Mid-Kansas Oil & Gas Co. 27 59,520
M. A. Smith et al, Tract-B, Gulf Prod. Co. 13 20,640
M. A. Smith, Lease 1, Section 23, California Co. 6 2640
University, George Anderson 1 ..... gas
Yates, Lease 1, California Co. 2 ..... dry
Yates-C, Mid-Kansas O. & G. Co. 12 ..112,320
Smith, Lease 1, California Co. 2 3216

Completions 7
Production 201,840
Gas production 7,000,000
Dry hole 1

UPTON COUNTY

Ricker, Humble O. & R. Co. 10 54

WARD COUNTY

Sealy, Prairie O. & G. Co. 1 ..
Dorr, Talbot et al 1 ..

Completions ..
Dry holes ..
Gas production 3,000

WINKLER COUNTY

T. G. Hendrick-C, Lease 2, Humble O. & R. Co. 2 .....
Grisham-Hunter, Pure Oil Co. 6 .....
Ida Hendrick-A, Shell Pet. Corp. and The Texas Co. 11 .....
T. G. Hendrick-B, Shell Pet. Corp. and The Texas Co. 6 .....
Grisham-Hunter, T-89-E, Southern Crude Oil Purch. Co. 2 .....
Ida Hendrick, T-88-D, Southern Crude Oil Purch. Co. 3 .....
Ida Hendrick, T-88-H, Southern Crude Oil Purch. Co. 5-A .....
T. G. Hendrick, T-88-N, Southern Crude Oil Purch. Co. 4 .....
McCabe, Independent Oil & Gas Co. 3
Morton, Marland Oil Co. 1 .....
Hendricks-A, Morris & Henshaw 1 .....
Hendricks, T-88-D, Southern Crude Oil Purch. Co. 4 .....
Hendricks, T-88-T, Southern Crude Oil Purch. Co.6 .....
Daugherty, Shell & Danciger 2 .....
Hendricks-C, Skelly Oil Co. 1 .....
Cowden, Prairie Oil & Gas Co. 3 .....
Tobe Morton, Prairie Oil & Gas Co. 1.
Daugherty, Amerada Pet. Corp. 2 .....
Daugherty, Empire Gas & Fuel Co. 2.
Hendricks-C, Humble O. & R. Co. 3 .....
Tobe Morton, Marland Oil Co. 1 .....
Hendricks, American Maracaibo 1 .....
Hendricks, American Maracaibo 1-B..
Lum Daugherty, Prairie O. & G. Co.
Tobe Morton, Prairie O. & G. Co. .....
Hendricks-C, Pure Oil Co. 11 .....
Hendricks-F, Shell Pet. Co. 1 .....
Hendricks, T-89-I, Southern Crude O. P. C. 2 .....
Hendricks, T-88-O, Southern Crude O. P. Co. 2 .....
Hendricks, T-88-H, Southern Crude O. P. Co. 6 .....
Hendricks-E, Atlantic Oil Prod. Co. 7
Cowden, Prairie O. & G. Co. 5 .....
Scarborough, Magnolia Pet. Co. 1 .....
Hendricks, Pure Oil Co. 11 .....
Hendricks T-88-D, Southern Crude O. P. Co. 5 .....
Hendricks T-88-K, Southern Crude O. P. Co. 5 .....
Hendricks T-88-L, Southern Crude O. P. Co. 3 .....
Hendricks T-89-C, Southern Crude O. P. Co. 3 .....
Hendricks T-89-E, Southern Crude O. P. Co. 2 .....
Hendricks T-89-I, Southern Crude O. P. Co. 1 .....
Hendricks T-89-J, Southern Crude O. P. Co. 1 .....
Morton, Marland Oil Co. 2 .....

Completions ..
Production 130,
Dry holes .....

NORTH CENTRAL TEXAS

Wells Completed

County—	Comp.	Prod.	Dry	Gas
Archer	22	1,195	9	..
Brown	40	380	25	1
Callahan	12	151	6	..
Clay	2	....	2	..
Coleman	14	710	8	1
Cooke	5	257	2	..
Eastland	18	827	11	1
Foard	1	....	1	..
Jack	1	....	1	..
Mills	1	....	1	..
Montague	4	87	1	..
Palo Pinto	4	....	4	..
Shackelford	19	1,093	7	1
Stephens	7	275	5	1
Throckmorton	1	....	1	..
Wichita	38	2,592	9	..
Wilbarger	39	3,585	9	..
Young	38	247	25	..
Total Feb.	266	11,399	127	4
Total Jan.	286	14,789	131	5
Difference	20	3,390	4	1

Wells Drilling

County—	Rigs	Drlg.	S.D.	Ttl.
Archer	10	34	6	50
Brown	1	30	22	53
Callahan	0	10	5	15
Coleman	6	24	15	45
Cooke	2	9	8	19
Clay	2	4	5	11
Eastland	2	16	10	28
Erath	3	9	5	17
Haskell	0	2	4	6
Jack	5	7	10	22
Montague	2	6	4	12
Palo Pinto	2	6	5	13
Shackelford	2	21	5	28
Stephens	6	12	5	23
Throckmorton	0	2	0	2
Wichita	12	30	6	48
Wilbarger	25	22	35	82
Young	5	25	14	44
Miscellaneous	2	5	8	15
Total Feb.	87	274	172	533
Total Jan.	104	281	136	521
Difference	17	7	36	12

WELLS COMPLETED
ARCHER COUNTY

L. F. Wilson-C, D. O. Johnson et al 5 ..
A. P. Jackson, McLaughlin Bros. 1 ... dry
J. E. Parrish-A, Reno Oil Co. 5 .....
J. D. Lyles, Jim Turner et al 4 .....
S. M. J. Benson, American Ref. Prop. 1
J. F. Cernosek, American Ref. Co. Prop. and Corlett & White 6 .....

G. Symank, C. W. Gilliland et al 1 22
G. Williams, Lea & Daniels 3 ..... dry
J. T. Richardson, Madden & Hunt 14 .. 65
G. Williams, Perkins & Cullum 3 ..... dry
M. Phillips, Pet. Prod. Co. and Hines et al 1 25
Ford, E. J. Stump Co. 1 ..... dry
Wilson, Underwood Drlg. Co. 3 ..... dry
Andrews-A, H. Donohoe 4 ..... dry
Roller est., Ted Harris et al 2 ..... dry
Kunkel et al, Humble O. & R. Co. 1 .. 72
King, H. Kelleher et al 1 ..... dry
Phillips, Hines et al 2 38
Wilson-A, Rathke Oil Co. 5 4
Parkey, The Texas Co. 1 ..... dry
Hennig, Grevin et al 3 54
Richardson, Madden & Hunt 16 55

Completions 22
Production 1195
Dry 9

BROWN COUNTY

J. Newton, Burris et al 11 20
Leslie, Daniels et al 1 ..... dry
Thompson, Davis et al 1 ..... dry
H. Byler, Humble O. & R. 9 100
Hodnett, Humble O. & R. 18 6
Suttles, McCartney 1 ..... dry
J. Newton, Mook-Texas Oil and Wakefield 5 ..... dry
R. Hickman, Phillips Pet. Co. 18 ..... dry
Reaves, Prairie O. & G. Co. 1 ..... dry
Bull, Roff 1 ..... dry
A. B. Teston, Valley Oil Co. 12 50
Shields-A, Bruce 1 ..... dry
Mooren, Dennis 1 ..... dry
Starkey, Garrett & Hammon 2 ..... dry
Fuller, Humble O. & R. Co. 1 ..... dry
Jopling-B, Royalty Oil Corp. 1 ..... dry
Moore, Buffington & Smith 1 ..... dry
Curry, Daniels et al 1 ..... abd
Robertson, Root et al 1 ..... dry
Curry, Syndicate Oil Co. 4 25
Armstrong, Young Bros., Alexander et al 3 ..... dry
Hickman, Young Bros., Alexander et al 20 50
Bull, Britt & Hinnard 1 ..... dry
Norton, Evans 1 ..... dry
Smith, McClung 1 30
Mayes, Paramount Oil Royalties, Inc. 2 .. 8
Leslie, Alford Oil Co. 2 ..... gas
Guthrie, Amerada Pet. Corp. 3 ..... dry
Fred Turner, Daniels Malone et al 1.. abd
Hickman, Humble O. & R. Co. 29 ..... dry
Hill, Green 3 15
Stanley, Harry Gutman & Aldricks 9 .. 10
Arms, Prairie O. & G. Co. 5 ..... dry
Hickman, Young Bros., Alexander et al 21 50
Smith, Amerada Pet. Corp. 1 ..... dry
Dunn, Brock & Switzer No. 1 ..... dry
Rierdan, Green et al 1 ..... dry
Stanley, H. Hutzman 10 10
Collier, Lloyd Oil Corp. 16 6
Mayes, Paramount Oil Royalties 3 ..... dry

Completions 40
Production 380
Gas 2,000,000
Dry 25

CALLAHAN COUNTY

P. G. Hatchett, Moutray Oil Co. 12 ..... dry
Freeman, Hurley et al 1 ..... dry
Williams, The Texas Co. 1 ..... dry
Hatchett, Moutray Oil Co. 13 25
Henderson, Neeb Howard 1 ..... abd
Hatchett, Reiter-Foster Oil Corp. 18 .. 15
Hatchett, The Texas Co. 18 ..... dry
Kluts, Grass Roots Oil Co. 7 34
Hatchett, The Texas Co. 19 2
Linville, Weigel et al 1 ..... dry
Miller, Bradstreet & Holden 11 60
Hatchett-A, Reiter Foster Oil Corp. 8 .. 15

Completions 12
Production 151
Dry 6

CLAY COUNTY

J. F. Johnson, A. C. Camp et al 1 ..... dry
Landrum, Bain & Clark 7 ..... jkd

Completions 2
Dry 2

COLEMAN COUNTY

Featherston, Manhattan Oil Co. 1 ..... dry
Blair, Red Bank Oil Co. 1 ..... dry
Young Bros., Taylor et al 1 ..... gas
Baugh, Dunaway et al 1 ..... dry
Beatty, The Texas Co. 1 20
Burson, Donaldson & Miller 1 ..... abd
Sharp, Foster Bros. ..... gas
Haas, Foster and Midsun Oil Co. 1 65
Overall, Continental et al 4 250
Overall, Continental Oil Co. 11 375
Morris, Gwinnup & Bradstreet 2 ..... dry
Curry, Midland Oil Co. 1 ..... dry
Glover, Roth & Faurot 1 ..... dry
Sealey & Smith, Roth & Faurot No. 4 .. dry

Completions 14
Production 710
Gas 7,250,000
Dry 8

COOKE COUNTY

Dennis, Powell Oil Co. 1 8
Embry, Pure Oil Co. 147
Whaley, Richardson 1 ..... dry
Ball, W. E. Benson and Shell Pet. 1 .. dry
Timmis-A, Kewanee O. & G. Co. 5 102

Completions 5
Production 257
Dry 2

EASTLAND COUNTY

Miller, Hammun Oil Co. 2 ..... dry
Rust, Arnold et al 2 ..... gas
Green, Thompson et al 1 ..... dry
Fox, Dale O. & G. Co. 14 ..... dry
Poteet, Jake Hammon, Jr., 14 ..... dry
Holcomb, Harrell Oil Co. 1 ..... dry
Rosenquest, Teatsorth et al 1 15
Amis, Hickok Prod. & Dev. Co. 2 100
Hazzard, Goodwin et al 1 ..... abd
Turner, Jake Hammon, Jr., 1-B ..... dry
Holcomb, G. W. Price et al 2 ..... abd
Hasel, Root et al 2 350
Higginbotham, Texas Pacific C. & O. .. 350
Lyerla, Lewis et al 2 12
Gattis, Y. L. Jones 1 ..... dry
Shamburger, Jordon et al 1 ..... dry
Waddington, G. P. Mitcham's No. 1 ..... dry
Thorp, Southern O. & P. Co. 1 ..... gas

Completions 18
Production 827
Gas production 9,100,000
Dry and abandoned 11

FOARD COUNTY

F. Halsell, Empire G. & F. Co. and Marland Prod. Co. 1 ..... dry

JACK COUNTY

Daugherty, Bryson O. & G. Co. 1 ..... jkd

MILLS COUNTY

Traylor, Whitesides 1 ..... dry

MONTAGUE COUNTY

Parr, Chambers & Anchor 1 ..... dry
Maddox, Harris & Simons 5 26
Maddox, Pure Oil Co. 8 30
Gist-B, The Texas Co. 7 31

Completions 4
Production 87
Dry 1

PALO PINTO

Perkins, Hughes et al 1 ..... dry
McDonald, Gordon & Gholson 2 ..... dry
Gilbert, Shaw 2 ..... dry
Mosley, American Legion 1 ..... dry

Completions 4
Dry 4

SHACKELFORD COUNTY

C. Flippin-D, Cranfill & Reynolds 1 ... dry
Dyer, Midwest Explts. Co. 3 ..... dry
J. H. Nail, Morrison Oil Co. 1 ..... dry
J. B. Matthews, Ohio-Texas Oil Co. 11. 450
W. I. Cook-A, Sec. 61, Roeser & Pendleton 33 75
W. I. Cook-B, Sec. 61, Roeser & Pendleton 9 40
W. I. Cook-D, Sec. 61, Roeser & Pendleton 10 40
C. Flippin, Terry et al 2 ..... dry
Myer, Wichita Prod. Co. 5 ..... gas
Myer, Wichita Prod. Co. 6 25
Diller, Cranfill & Reynolds ..... dry
W. I. Cook-A, Sec. 60, Roeser & Pendleton 87 ..... dry
W. I. Cook-A, Sec. 61, Roeser & Pendleton 34 50
W. I. Cook-A, Sec. 83, Roeser & Pendleton 6 75
W. I. Cook-A, Sec. 83, Roeser & Pendleton 7 15
Matthews, Tannehill et al 11-58 3
Jones, Simms Oil Co. 4 20
Diller, Cranfill & Reynolds 2 ..... dry
Matthews, Ohio-Texas Oil Co. 1 300

Completions 19
Production 1093
Gas production 1,500,000
Dry 7

STEPHENS COUNTY

Stoker-A, Phillips Pet. Co. 4 ..... dry
Hall, States Oil Corp. 1 ..... dry
Morris, Cranfill & Reynolds 1 ..... dry
Rewin heirs, Striplin 1 25
Hand, Texas Pacific C. & O. Co. 3 250
Harrington, Lacy & Swenson et al 1 .. dry
Gholson, The Texas Co. 15 ..... dry

Completions 7
Production 275
Gas production 10,000
Dry 5

THROCKMORTON COUNTY

Kunkle, Jones et al 1 ..... dry

WICHITA COUNTY

H. B. Hines, J. Cable et al 1 ..... dry
Kemp & Kempner, Coleman & Coppock 13 35
M. P. Bishop, Comac and Prairie O. & G. Co. 3 30
S. H. McCarty-D, Hammon & Garrett 5 .. 30
J. & J. Waggoner, Harry Hines and Humble O. & R. Co. 13 27
W. H. Taylor, Humble O. & R. Co. 7 .. 200
W. H. Taylor, Humble O. & R. Co. 8 .. 75
W. H. Taylor, Humble O. & R. Co. 9 .. 200
G. L. Nance, Ryan Pet. Corp. 105 100
G. L. Nance, Ryan Pet. Corp. 106 45
Kemp & Kempner, Staley & Wynne 11. 180
Kemp & Kempner, Staley & Wynne 12. 400
Allen & Kemp, United Prod. Co. 2 92
Allen & Kemp, J. W. Caldwell 8 7
Allen & Kemp, J. W. Caldwell 9 ..... dry
Allen & Kemp, J. W. Caldwell 10 ..... dry
Kemp & Kempner, Coleman & Coppock 20 65
Taylor, Humble O. & R. Co. 10 200
Taylor, Humble O. & R. Co. 11 200
Wigley, Humble O. & R. Co. ..... dry
Waggoner, J. E. Kier 3 ..... 1½
Allen & Kemp, Producers Drlg. Co. 1 .. 41
Kemp & Kempner, Staley & Wynne 2. 185
Allen & Kemp, United Prod. Co. 3 35
Hodges-A, United Prod. Co. 9 75
Hooks, Fred Whitmeyer 1 ..... dry
Hooks, American Ref. Properties 1 ..... dry
Allingham, Clark & Dunaway 1 ..... dry
C. A. Everts, Myers 2 5
Burnett, Mount & Graham 1-B 3½
McCarty, Panhandle Ref. Co. 7 ..... dry
Allen & Kemp, Producers Oil Co. 1 41
McCarty-A, Shappell Oil Co. 10 ..... dry
Kemp & Kempner, Stanley & Wynne 2. 80
Manger, Carl B. Bailey 29 25
McCarty, W. H. Hammon 12 64
Taylor, Humble O. & R. Co. 12 125
Waggoner Bros., T. F. Hunter 14 25

Completions 38
Production 2592
Dry 9

WILBARGER COUNTY

W. T. Waggoner-B, Consolidated Oil 3. dry
W. T. Waggoner-B, Cosden & Co. 33 .. 56
W. T. Waggoner-AA, Fain-McGaha Oil Corp. 2 170
W. T. Waggoner-H, Golding-Cochran et al 2 100
W. T. Waggoner-Norwood, Phillips Pet. Co. 3 103
W. T. Waggoner-AA, Phillips Pet. Co. 2 dry
W. T. Waggoner-FF, Phillips Pet. Co. 3 60
W. T. Waggoner-K, Staley-Wynne & Co. 1 ..... dry
W. T. Waggoner, Stidham & Thrasher 1 ..... dry
W. T. Waggoner-C, The Texas Co. 8 .. 80
W. T. Waggoner-F, Waggoner Ref. Co. 6 15
W. T. Waggoner-G, Waggoner Ref. Co. 4 100
American Ref. Properties, Waggoner 1 dry
Waggoner-DD, Fain & McGaha Oil 2 .. 40
Waggoner, Lewis Prod. Co. 3 170
Waggoner, Lewis Prod. Co. 6 300
Waggoner-MM, Phillips Pet. Corp 5 25
Waggoner-F, Robertson et al 2 76
Waggoner-E, Shaw Oil Co. 2 100
Waggoner-C, The Texas Co. 7 45
Waggoner-K, Waggoner Ref. Co. 2 96
Waggoner-I, Consolidated Oil Co. 1 ... 20
Waggoner-S, Fain McGaha Oil Corp. 31 90
Waggoner-N, Fain McGaha Oil Corp. 2 145
Waggoner-G, Kolp 1 270
Waggoner-G, Kolp 2 220
Waggoner, Laalaph Oil Co. 1 250
Waggoner-NN, Phillips Pet. Corp. 2 ... 8
Waggoner-H, Waggoner Ref. Co. 14 ... 225
Waggoner-B, Beasley et al 1 ..... dry
Waggoner-S, Fain McGaha Oil Corp. 30 125
Waggoner-S, Fain McGaha Oil Corp. 32 225
Waggoner, Lesh & McCalls 1 ..... dry
Ann Waggoner, Phillips Pet. Corp. 2 ... 12
Jennings, Phillips Pet. Corp. 1 ..... dry
Waggoner-N, Phillips Pet. Corp. 1 9
Waggoner-E, Shaw Oil Co.'s 3 200
Waggoner-F, Staley Wynne 4 250
Waggoner, Wanderer Oil Co. 1 ..... dry

Completions 39
Production 3585
Dry 9

YOUNG COUNTY

W. M. Graham, Booth Oil Co. et al 3 ... 7
Snider, Bradstreet Co. 1 62
Sullivan, Burns et al 1 ..... dry
L. F. Gragg, Carter & Ruff 1 ..... dry
Campbell-H, Fain-McGaha Oil Corp. 1 dry
S. E. Watson-A, Holbrook & Wood 4 .. dry
Drum, Hurst et al 1 ..... dry
Langston, Kleiner et al 27 35
H. O. Prideaux-C, Panhandle Ref. Co. et al 12 20
W. D. Weems, Panhandle Ref. Co. 1 .. dry
Drum, Pennell et al 1 ..... dry
Parrish-A, Pet. Producers Co. 5 5
E. M. Eichelberger-A, Rhodes et al 1 .. dry
O. L. Sweet, Riggs et al 11 ..... dry
R. Campbell, Underwood Drlg. Co. et al 5 ..... dry
E. R. Prideaux, Walton et al 1 35
Dailey, Wootten & Reed 1 ..... dry
Watson, Holbrook & Woods 5 ..... dry
Drum, Pennell et al 2 ..... dry
Bagley, Williams 1 5
Calvin, Wise & Jackson 4 4
Drum, Wooten & Reed 1 ..... dry
Orr, Allday et al 1 ..... dry
Boone, Bullington, Lee & Pendleton 7 .. 20
Drum, Pennell & Bratcher 1 ..... dry
Campbell, Prairie O. & G. Co. 6 ..... dry
Campbell, Richards 2 12
Prideaux, Riggs & Oliphant 1 ..... dry
Vardy, Stevens & Streeter 1 ..... dry
Campbell, Underwood Drlg. Co. 4 6
Prideaux, Walton et al 2 27
Williams, Bagley 2 ..... dry
Stewart, Wooten & Reed 1 ..... dry
Snider, Broadstreet Co. 2 9
Campbell-I, Fain McGaha Oil Co. 1 ... dry
Birdwell & Hazard, Pennell & Walton 1 dry
Kunkel, Prairie O. & G. Co. 6 ..... dry
Jordon, Weekley Oil Corp. 2 ..... abd

Completions 38
Production 247
Dry 25

PANHANDLE FIELDS

Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	5	1,060	1	1
Cottle	1	....	1	..
Gray	15	5,159	2	..
Hall	1	....	1	..
Hutchinson	6	180	..	..
Moore	2	15	1	..
Wheeler	4	....	..	4
Total Feb.	34	6,414	6	5
Total Jan.	26	6,581	1	5
Difference	8	167	5	0

Wells Drilling

County—	Rigs	Drlg.	S.D.	Ttl.
Carson	2	14	2	18
Gray	11	31	6	48
Hutchinson	6	25	7	38
Moore	4	5	2	11
Wheeler	5	14	4	23
Miscellaneous	5	7	8	20
Total Feb.	33	96	29	158
Total Jan.	37	94	24	155
Difference	4	2	5	3

CARSON COUNTY

Fee No. 44, Magnolia Petroleum Co. 6 .. 725
E. Cooper-Roxana, Stubblefield et al .. 160
Hodges, Duncan & Reiger 1 ..... abd
Polling, Navajo Oil Co. 2 ..... gas
Schafer, Skelly Oil Co. 10 175

Completions 5
Production 1060
Gas production 8,000,000

COTTLE COUNTY

Cannon, Skelly Oil Co. 1 ..... dry

GRAY COUNTY

H. M. Davis, The Texas Company 4 .... dry
E. B. Clay, United Eight O. & G. Co. 1.. 64
G. H. Saunders-B, Perkins & Cullum 1.. 40
G. H. Saunders, Plains Drilling Co. 2 .. 2825
A. Chapman-C, Plains Drlg. Co. & Ray 1 725
S. W. McLarty-C, The Texas Company 1 31
G. H. Saunders, The Texas Company 7.. 552
Bull, McIlroy 2 20
Olsen, Phillips Pet. Corp. ..... dry
Saunders, Skelly Oil Co. 4 25
Saunders, The Texas Company 8 130
Saunders, The Texas Company 9 542
Jackson North, Skelly Oil Co. 1 135
Jones, Phillips Pet. Corp. 4 65
Saunders, Skelly Oil Co. 3 5

Completions 15
Dry holes 2
Production 5159

HALL COUNTY

H. Hughes estate, Rio Bravo Co. 1 .... dry

HUTCHINSON COUNTY

Johnson Bros.-Dugan, Phillips Pet. Corp. 1 40
Sanford-Garland, Phillips Pet. Corp. 1.. 40
Sanford Pool, Phillips Pet. Corp. 2 25
Jameson, Amarillo Ref. Co. 1 15
Johnson, Dean et al 2 ..... gas
Johnson Bros. (Trigg), Phillips Pet. Corp. 1 6

Completions 6
Production 180
Gas production 40,000,000

MOORE COUNTY

Sneed, Jr., Devonian Oil Co. 1 ..... junken
Hagy, Barnsdall Oil Co. 1 15

Completions 2
Production 15
Dry holes 12

WHEELER COUNTY

I. Close, Martin & DeBous 1 ..... gas
Setler, Neudigate et al 2 ..... gas
Shelton, Lone Star Gas Co. 1 ..... gas
Fee, Wish Kamper 2 ..... gas

Completions 4
Production 0
Gas production 232,000,000

EAST CENTRAL TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Abd.	Gas	Rgs.	Dig.	Ttl.
Anderson	2	1,450	1	0	3	5	8
Angelina	2	0	2	0	0	0	0
Cherokee	0	0	0	0	0	1	1
Falls	0	0	0	0	0	2	2
Leon	0	0	0	0	0	2	2
Limestone	1	0	1	0	1	1	2
Milam	1	0	1	0	1	1	2
Navarro	1	0	1	0	0	1	1
Robertson	0	0	0	0	0	1	1
Rusk	1	0	1	0	1	0	1
Ttl. Feb.	8	1,450	7	0	6	14	20
Ttl. Jan.	10	0	10	0	5	14	19
Difference	2	1,450	3	0	1	0	1

ANDERSON COUNTY

Boggy Creek—Hurd, Humble Oil & Ref. Co. 1 ..... abd
Boggy Creek—Todd, Humble Oil & Ref. Co. 1-B 1450

Wells completed 2
Production 1450
Abandoned 1

ANGELINE COUNTY

Collmorgan, A. E. Findley 1 ..... abd
Kimmey, Harrison et al 1 ..... abd

Wells completed 2
Abandoned 2

LIMESTONE COUNTY

Forest, Pine Creek Oil & Gas Synd. 1.. abd

MILAM COUNTY

Southers, White et al 1 ..... abd

NAVARRO COUNTY

McGowan, J. K. Hughes et al 1 ..... abd

RUSK COUNTY

Mathers, Osborne et al 1 ..... abd

VAN ZANDT COUNTY

Neils, Pure Oil Co. 1 ..... abd

SOUTHWEST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Mirando	34	818	14	9	10	28	38
Joe Bruner	37	14,983	9	0	21	56	77
Yoast Field	7	3,030	4	0	0	3	3
Agua Dulce	3	....	1	2	0	1	1
Refugio	4	500	1	1	1	6	7
Misc.	21	50	19	1	7	87	94
Total Feb.	106	19,381	48	13	39	181	220
Total Jan.	123	18,842	39	13	49	173	222
Difference	17	539	9	0	10	8	2

MIRANDO FIELDS
WELLS COMPLETED
HUMBLE FIELD—DUVAL

Humble Oil & Ref. 13 ..... gas
Humble Oil & Ref. 12 ..... gas

DRISCOLL FIELD

Robert Driscoll 14 ..... gas

SCHOOLFIELD—O'BYRNE POOL

Sun Oil Co. 2 ..... abd
Magnolia Pet. Co. 2-A ..... abd
Magnolia Pet. Co. 4-B 10

RANDADO FIELD—JIM HOGG

Randado Oil Corp. 29 30
Randado Oil Corp. 30 45
Randado Oil Corp. 31 130
Randado Oil Corp. 32 65
Randado Oil Corp. 33 30

ALWORTH FIELD

Brooklyn Oil Co. 2 ..... abd

REISER FIELD—WEBB

W. O. Wheatley 2 ..... abd
Marts & Beaven 2 ..... abd

COLE FIELD

O. W. Killam 5 ..... gas
O. W. Killam 1 ..... gas

CAROLINA-TEXAS POOL

Foster, Barnsley 4 ..... gas
Foster Barnsley 5 60

ALBERCAS FIELD

Magnolia Pet. 13 ..... abd
O. W. Killam 32 ..... abd
Newton Drilling Co. 4 ..... abd
Edward S. Albans 4 ..... abd
A. M. Major 1 ..... abd
Magnolia Pet. 14 100

MAGNOLIA-COLE FIELD

Houston Oil Co. 19-D 300
W. F. Morgan 1 ..... abd
Union Exploration Co. 1 ..... gas
Houston Oil Co. 1-G ..... gas
Magnolia Pet. 1 ..... gas

WILDCATS

Edouard Raymond 1 ..... abd

STARR COUNTY

The Texas Company 1 ..... abd

JENNINGS FIELD—ZAPATA

South Texas Prod. Co. 3 ..... gas
O. W. Killam 1-A ..... abd

CHARCO-REDONDO

W. R. Duke 3 3

Wells completed 34
Gas 9
Dry and abandoned 14
Production 818
Gas production 247,000,000

YOAST FIELD—BASTROP

The Texas Company 2 950
Cranfill & Reynolds 1 ..... abd
Cranfill & Reynolds 6 ..... abd
Atlantic Prod. Co. 2 1000
Atlantic Prod. Co. 3 1000
Sun Oil Co. 80
Jake Jarmon 1 ..... abd

Wells completed 7
Dry and abandoned 3
Production 3030

BRUNER FIELD—CALDWELL

J. S. Abercrombie 5 250
Tips de Armond 1 ..... abd
D. F. Bryan 1 ..... abd
Brown and others 1 ..... abd
Cranfill & Reynolds 1 630
Linderman-Atlantic 2-A 100
Lutex Oil, Inc. 5 66
S. C. Wagley 1 ..... abd
Stover & May 1 ..... abd
Stover & May 1 ..... abd
C. E. Lange 2 ..... abd
Guerrin & Gastor 1 ..... abd
Sun Oil Co. 4 400
Golden West Oil 2 75
Golden West Oil 6 250
The Texas Company 1 25
The Texas Company 4 374
Gulf Production Co. 1 100
Gulf Production Co. 7 150
Gulf Production Co. 7 250
Gulf Production Co. 8 100
Gulf Production Co. 3 300
Gulf Production Co. 1 1392
Shell Petroleum Co. 1 300
Shell Petroleum Co. 3 3100
Shell Petroleum Co. 2 800
Shell Petroleum Co. 2 350
Shell Petroleum Co. 5 440
Humble Oil & Ref. Co. 2 350
Humble Oil & Ref. Co. 3 175
Humble Oil & Ref. Co. 4 175
Humble Oil & Ref. Co. 4 400
Humble Oil & Ref. Co. 1-A 4081
Humble Oil & Ref. Co. 3 175
Humble Oil & Ref. Co. 1 50
Humble Oil & Ref. Co. 2 125
Humble Oil & Ref. Co. 6-A ..... abd

Wells completed 37
Dry and abandoned 9
Production 14,983

AGUA DULCE FIELD—NUECES

Agua Dulce Oil & Gas Co. 1 ..... gas
R. & G. Corp. 1 ..... gas
Milam Drilling Co. 1 ..... abd

Wells completed 3
Gas 2
Dry and abandoned 1
Gas production (est.) 160,000,000

REFUGIO FIELD—REFUGIO

Union Explo. Co.-Wm. F. Morgan 1 ..... gas
Benedum & Trees-Wm. F. Morgan 1 ..... abd
Mission Drilling Co. 1 500
Houston Gulf Gas Co. 7 ..... abd

Wells completed 4
Gas 1
Dry and abandoned 2
Production 500
Gas production (not gauged) 60,000,000

MISCELLANEOUS

Caldwell County—
The Texas Company, Branyon 2-B 50
Rogers & Heap, Forister 1 ..... abd
F. A. Gomillion 1 ..... abd
Fred Adams, Burney 1 ..... abd
Bartlett Bros., Martindale 1 ..... abd
John V. Edwards, Caldwell 1 ..... abd
Edwards County—
McMan Oil & Gas, Schreiner 1 ..... abd
Goliad County—
Southern Crude Oil, Pettus 1 ..... abd
McCarson, Flake 1 ..... abd
J. E. Alexander, Bergman 1 ..... abd
Guadalupe County—
Magnolia Pet., Schubert 1 ..... abd
Jackson County—
J. B. Douglas, Lowrance 1 ..... abd
Kleberg County—
Humble O. & R. Co., Flato 4 ..... abd
Live Oak County—
W. J. Walton, Wedding 3 ..... abd
Maverick County—
Rycade Oil Co., Sullivan 3 ..... abd
T. Johnson, Wipff 1 ..... abd
Rycade Oil Co., Chittim 2 ..... abd
Medina County—
North & South Dev., Nehr 1 ..... abd
Holt & Cromwell, Mott 1 ..... abd
Travis County—
Mid-Kansas O. & G., Wolff 1 ..... abd
Victoria County—
Humble O. & R. Co., Kohutek 1 ..... gas

Wells completed 21
Dry and abandoned 19
Gas 1
Production 50

GULF COAST

Texas

Summary of Field Operations

Field—	Comp.	Prod.	Abd.	Gas	Rgs.	Dig.	Ttl.
Barbers Hill	2	4,000	1	0	0	13	13
Batson	4	20	1	0	1	2	3
Big Creek	2	1,800	0	0	0	4	4
Blue Ridge	5	2,050	1	0	0	6	6
Boling	2	70	0	0	2	10	12
Clay Creek	8	6,440	4	1	2	3	5
Damon Mound	1	0	1	0	0	0	0
DeWalt	2	748	0	0	2	4	6
Goose Creek	2	300	1	0	0	5	5
High Island	1	0	1	0	0	3	3
Hull	4	885	0	0	0	6	6
Humble	1	1,000	0	0	1	4	5
Liberty	12	3,650	3	0	4	13	17
Markham	1	0	1	0	0	2	2
Nash	2	1,000	1	0	0	1	1
N. Dayton	0	0	0	0	0	1	1
Orchard	0	0	0	0	0	1	1
Orange	2	46	0	0	0	4	4
Pierce Jct.	7	4,510	2	0	0	15	15
Raccoon Bend	4	1,468	1	0	2	8	10
Saratoga	0	0	0	0	0	3	3
Sour Lake	1	55	0	0	0	0	0
Spindletop	10	4,620	4	0	2	16	18
Miscellaneous	8	6	6	0	5	28	33
Ttl. Feb.	81	32,768	28	1	21	152	173
Ttl. Jan.	95	40,911	26	1	29	126	155
Difference	14	8,143	2	0	8	26	18

South Louisiana

Summary of Field Operations

Field—	Comp.	Prod.	Abd.	Gas	Rgs.	Dig.	Ttl.
Anse L. Butte	0	0	0	0	0	1	1
Bayou Bo'lon	0	0	0	0	1	4	5
Edgerly	1	25	0	0	0	4	4
Hackberry	5	1,100	3	0	5	8	13
Jennings	1	30	0	0	0	8	8
Lockport	3	1,700	1	0	1	6	7
Sorrento	0	0	0	0	0	1	1
Starks	1	80	0	0	0	2	2
Sulphur	1	0	1	0	0	6	6
Sweet Lake	0	0	0	0	0	2	2
Vinton	3	497	1	0	1	2	3
Miscellaneous	3	0	3	0	5	11	16
Ttl. Feb.	18	3,432	9	0	13	55	68
Ttl. Jan.	31	4,986	18	0	16	52	68
Difference	13	1,554	9	0	3	3	0
Ttl. Gulf C.	99	36,200	37	1	34	207	241
Total Jan.	126	45,897	44	1	45	178	223
Difference	27	9,697	7	0	11	29	18

WELLS COMPLETED

TEXAS

BARBERS HILL—CHAMBERS COUNTY

Chambers, Yount Lee Oil Co. 1 4000
Richardson, Yount Lee Oil Co. 3 ..... abd

Wells completed 2
Production 4000
Abandoned 1

BATSON —HARDIN COUNTY

Paraffine, Acorn Oil Co. 67 5
Stateland, East Batson Oil Co. 17 5
Knight, Gulf Prod. Co. 20 ..... abd
Paraffine, B. O. Poole 1 10

Wells completed 4
Production 20
Abandoned 1

BIG CREEK—FORT BEND COUNTY

Davis, Gulf Prod. Co. 36 1400
Davis, Navarro Oil Co. 2 400

Wells completed 2
Production 1800

BLUE RIDGE—FORT BEND COUNTY

Overly, Dudley S. Golding 1 250
Invincible, Gulf Prod. Co. 6 1,200
Luscher, Gulf Prod. Co. 14 400
West-Schenck, Moody Corp. 5 ..... abd
Robinson, Navarro Oil Co. 4-A 200

Wells completed 5
Production 2050
Abandoned 1

BOLING—WHARTON COUNTY

V. Kostelink, Heine & Gayle 5 20
Taylor, Vacuum Oil Co. 1 50

Wells completed 2
Production 70

CLAY CREEK—WASHINGTON COUNTY

H. Witt, Sun Oil Co. 1 3960
G. H. Grote, Sun Oil Co. 3 ..... gas
G. H. Grote, Sun Oil Co. 1 ..... abd
J. F. Grote, Sun Oil Co. 5 1500
L. Marcus, Sun Oil Co. 1 ..... abd
C. H. Marcus, Sun Oil Co. 1 980
Einman, Sun Oil Co. 1 ..... abd
Schirmer, Sun Oil Co. 2 ..... abd

Wells completed 8
Production 6440
Abandoned 4
Gas 1

DAMON MOUND—BRAZORIA COUNTY

Norton, Sinclair Oil & Gas Co. 5 ..... abd

DEWALT—FORT BEND COUNTY

Nelson, Humble Oil & Ref. Co. 1 248
Deatherage, Humble Oil & Ref. Co. 2.. 500

Wells completed 2
Production 748

GOOSE CREEK—HARRIS COUNTY

Paddoc-Smith, Gulf Prod. Co. 13 300
Simms-Smith, Humble Oil & Ref. Co. 74 abd

Wells completed 2
Production 300
Abandoned 1

HIGH ISLAND—GALVESTON COUNTY

Cade, Marrs McLean 1 ..... abd

HULL—LIBERTY COUNTY

Barngrover, Empire G. & F. Co. 17 700
Phoenix, Gulf Prod. Co. 68 40
Hooks-Spell, Humble Oil & Ref. Co. 3.. 120
Dolbear, Republic Prod. Co. 53 25

Wells completed 4
Production 885

HUMBLE—HARRIS COUNTY

River Bed, Sun Oil Co. 45 1100

LIBERTY—LIBERTY COUNTY

Goggan, Empire Gas & Fuel Co. 1 .... abd
Marrs McLean, Gulf Prod. Co. 5 50
McLean, Gulf Prod. Co. 7 300
McLean, Gulf Prod. Co. 8 700
Mitchell, Sun Oil Co. 26 125
Mitchell, Sun Oil Co. 29 750
Mitchell, Sun Oil Co. 31 75
Mitchell, Sun Oil Co. 32 1100
Mitchell, Sun Oil Co. 33 250
Mitchell, Sun Oil Co. 34 ..... abd
Mitchell, Sun Oil Co. 36 ..... abd
Mitchell, Yount Lee Oil Co. 14 300

Wells completed 12
Production 3650
Abandoned 3

MARKHAM—MATAGORDA COUNTY

Hudson, Rycade-Humble 4 ..... abd

NASH DOME—FORT BEND & BRAZORIA

Wisdom, Rycade Oil Corp. 21 1000
Wisdom, Rycade Oil Corp. 24 ..... abd

Wells completed 2
Production 1000
Abandoned 1

ORANGE—ORANGE COUNTY

McLean, Brownie Babbette Oil Co. 5 .. 6
Chesson, Continental Oil Co. 14 40

Wells completed 2
Production 46

PIERCE JUNCTION—HARRIS COUNTY

Ritter, Abercrombie & Harrison 3 1630
Whitehead, Anderson & Plummer 2 ... 1200
Howe, H. R. Cullen 5 ..... abd
Cain, Gulf Prod. Co. 7 500
E. R. Taylor, Gulf Prod. Co. 27 1000
Settegast, Rio Bravo Oil Co. 6-A ..... abd
Settegast, Rio Bravo Oil Co. 9-A 180

Wells completed 7
Production 4510
Abandoned 2

RACCOON BEND—AUSTIN COUNTY

Rufus Hardie, Humble-Valley 2 820
Walton, Humble Oil & Ref. Co. 2 548
Grawunder, Humble-Valley 1-C 100
E. B. Wilson, Humble-Valley 2 ..... abd

Wells completed 4
Production 1468
Abandoned 1

SOUR LAKE—HARDIN COUNTY

Herbert, Elbert et al 4 55

SPINDLETOP—JEFFERSON COUNTY

McFaddin, Lount Lee Oil Co. 50 ..... abd
McFaddin, Yount Lee Oil Co. 53 350
McFaddin, Yount Lee Oil Co. 80 ..... abd
McFaddin, Yount Lee Oil Co. 89 1000
McFaddin, Yount Lee Oil Co. 92 1250
Gladys City, Yount Lee Oil Co. 37 720
Gladys City, Yount Lee Oil Co. 75 .... abd
Gladys City, Yount Lee Oil Co. 77 100
Gladys City, Yount Lee Oil Co. 78 1200
Davis, Yount Lee Oil Co. 1 ..... abd

Wells completed 10
Production 4620
Abandoned 4

MISCELLANEOUS TEXAS

Austin County—
Carlisle, Pratt et al 2 1
Brenham, O. Reece, Lyne Oil Co. 11 .. 5
Brenham, Pomycal, Conklin et al 6 .... abd
Colorado County—
Byers, Humble Oil & Ref. Co. 1 ..... abd
Hardin County—
Sternberg, Gaddy Oil Co. 1 ..... abd
Jasper County—
Nona Mills Lbr. Co., Tar Well Oil Co. 1 abd
Liberty County—
Moss Bluff, Sterling, Humble O. & R. 3 abd
Washington County—
I. R. DeWood, McMurry & Davis 1 .... abd

Wells completed 8
Production 6
Abandoned 6

SOUTH LOUISIANA

EDGERLY—CALCASIEU PARISH

Hill, Drysdale & Savoy 3 25

HACKBERRY—CAMERON PARISH

Dahon, Cameron Oil Co. 2 300
Vincent, Cameron Oil Co. 1 ..... abd
Elender, Noble Oil Co. 3 ..... abd
Sonnier, Sutton Seiss & Green 1 800
Perkins, Yount Lee Oil Co. 1 ..... abd

Wells completed 5
Production 1100
Abandoned 3

JENNINGS—ACADIA PARISH

Latrielle, The Texas Company 107-A .. 30

LOCKPORT—CALCASIEU PARISH

Miller, Vacuum-Gulf 20 500
Miller, Vacuum-Gulf 22 1200
Miller, Vacuum-Gulf 22-A ..... abd

Wells completed 3
Production 1700
Abandoned 1

STARKS—CALCASIEU PARISH

Lutcher-Moore, Gulf Ref. Co. 6 80

SULPHUR DOME—CALCASIEU PARISH

Fee, Union Sulphur Co. 729 ..... abd

VINTON—CALCASIEU PARISH

Star-Vincent, Gulf Ref. Co. 47 ..... abd
Shaw, Salt Dome Oil Co. 1 147
Gray, Vinton Pet. Co. 1 350

Wells completed 3
Production 497
Abandoned 1

MISCELLANEOUS LOUISIANA

Cameron Parish—
Black Bayou, Watkins, Shell Pet. Corp. 7 ..... abd
Evangeline Parish—
Pine Prairie, Crowell-Spencer, Evangeline Oil Co. 1 ..... abd
Iberia Parish—
Loreauville, State, Gulf Ref. Co. 8-Z ... abd

Wells completed 3
Production 5
Abandoned 4

EAST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rigs	Drg.	Ttl.
Bowie	0	0	0	0	0	1	1
Camp	0	0	0	0	0	1	1
Cass	0	0	0	0	0	1	1
Harrison	1	0	0	0	1	1	2
Marion	0	0	0	0	0	1	1
Panola	6	0	0	0	6	7	13
Red River	0	0	0	0	0	8	8
Shelby	0	0	0	0	0	2	2
Total Feb.	7	0	0	7	8	18	26
Total Jan.	9	0	3	6	6	17	23
Difference	2	0	3	1	2	1	3

*Gas production: Harrison, 1,080,000; Panola, 18,300,000; total, 19,380,000 feet.

HARRISON COUNTY

James Short Survey—Furr, C. H. Lyons and others 3 ..... gas

Gas production 1,080,000

PANOLA COUNTY

James Matthews Survey—Gully, Eureka Natural Gas Co. 1 ..... gas
E. Jones Survey—T. C. Adams, Magnolia Petroleum Co. 2 ..... gas
B. C. Jordan Survey—Steele, Magnolia Petroleum Co. 13 ..... gas
E. Jones Survey—T. C. Adams, Kirby Rowe Drilling Co. 1 ..... gas
B. C. Jordan Survey—T. C. Adams, The Texas Company 8-A ..... gas
B. C. Jordan Survey—Crenshaw, D. Thomason 12 ..... gas

Gas production 18,300,000

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rigs	Drg.	Ttl.
Bienville	0	0	0	0	0	1	1
Bossier	2	0	1	1	1	4	5
Caddo	6	120	3	0	4	15	19
Catahoula	0	0	0	0	0	1	1
Claiborne	0	0	0	0	0	4	4
DeSoto	1	0	1	0	5	7	12
East Carroll	1	0	1	0	0	0	0
Franklin	0	0	0	0	0	1	1
Grant	0	0	0	0	2	1	3
LaSalle	2	0	2	0	2	1	3
Lincoln	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Morehouse	2	0	0	2	5	6	11
Natchitoches	0	0	0	0	1	1	2
Ouachita	3	0	0	2	8	11	19
Red River	0	0	0	0	2	2	4
Rapides	2	0	2	0	0	0	0
Richland	3	0	1	2	7	4	11
Sabine Parish	0	0	0	0	1	3	4
Tensas	0	0	0	0	0	1	1
Union	1	0	0	1	1	7	8
Webster	3	0	2	1	4	8	12
Total Feb.	26	120	13	10	43	80	123
Total Jan.	32	218	11	17	34	83	117
Difference	6	98	2	7	9	3	6

*Gas production: Bossier, 1,000,000; Morehouse, 14,177,000; Ouachita, 26,000,000; Richland, 79,071,000; Union, 600,000; Webster, 4,500,000; total, 125,348,000 feet.

WELLS COMPLETED

BOSSIER PARISH

29-22-11 Tidwell, Arkansas Natural Gas Corp. 1 ..... dry
25-16-12 Hodges, Palmer Corp. 12-B ... gas

Gas production 1,000,000

CADDO PARISH

22-22-15 Land, Bayou State Oil Co. 6 .. 7
33-21-16 Fee, W. D. Chew 8 20
14-21-15 Dillon, Dixie Oil Co. 91 93
15-21-16 Gibbins, C. G. Gibbins 1 ..... dry
15-20-15 Thomas, Simplex Oil Co. 5 ... dry
31-21-15 Muslow, Thomason and others 7 ..... dry

Wells completed 6
Production 120
Dry 3

DE SOTO PARISH

22-14-12 State, Benedum & Trees Oil Co. 1 ..... dry

LA SALLE PARISH

30-10-2e Tremont, Ayers Brothers 6 ... dry
1-10-1e Urania, Randall and others 3. dry

MOREHOUSE PARISH

53-20-4 Fairly, Amalgamated Carbon Co. 3 ..... gas
35-21-4 Crossett, Natural Gas Producing Co. 22 ..... gas

Gas production 14,177,000

OUACHITA PARISH

4-19-4 Lieber, Ouachita Natural Gas Co. 5 ..... gas
29-19-4 Fee, Palmer Corp. 5 ..... gas
6-19-5 Fee, United Carbon Co. 3 ..... gas

Gas production 26,000,000

RAPIDES PARISH

13- 5-4 Wettermark, O. E. Gilbertson, trustee 3 ..... dry
1-2s-2w Fee, Glenmora Petroleum Co. 1 dry

RICHLAND PARISH

21-16-6 D. R. Sartor, Magnolia Petroleum Co. 1 ..... gas

5-15-6 Pardue, Ouachita Natural Gas Co. 5 ..... gas
19-16-7 Chapman, Richland Operating Co. 1 ..... dry

Gas production 79,071,000

UNION PARISH

6-20-3 Nichols, United Carbon Co. 1. gas

Gas production 600,000

WEBSTER PARISH

24-21-10 Hope, Cotton Valley Syndicate 19 ..... gas
33-23-9 Elkins, Jones and others 1 .. dry
23-21-10 Hodges, Ohio Oil Co. (rig) .. abd

Gas production 4,500,000

ARKANSAS

ARKANSAS
Summary of Field Operations

	Comp.	Prod.	Dry	*Gas	Rigs	Drg.	Ttl.
Ashley	0	0	0	0	1	2	3
Bradley	1	0	1	0	0	0	0
Calhoun	0	0	0	0	0	1	1
Chicot	0	0	0	0	0	2	2
Clark	0	0	0	0	0	1	1
Clay	0	0	0	0	0	1	1
Columbia	0	3	0	3	0	1	1
Drew	0	0	0	0	0	1	1
Faulkner	0	0	0	0	0	1	1
Franklin	0	0	0	0	1	0	1
Garland	0	0	0	0	0	2	2
Jackson	0	0	0	0	0	1	1
Johnson	0	0	0	0	0	3	3
Little River	0	0	0	0	0	1	1
Logan	0	0	0	0	0	2	2
Miller	0	0	0	0	0	1	1
Nevada	1	10	0	0	0	4	4
Ouachita	3	125	1	0	3	9	12
Pulaski	1	0	1	0	0	0	0
Union	18	1,045	9	2	7	20	27
Washington	0	0	0	0	0	2	2
Total Feb.	27	1,180	15	2	12	55	67
Total Jan.	28	4,122	9	5	20	59	79
Difference	1	2,942	6	3	8	4	12

*Gas production: Union County, 84,918,690 feet.

WELLS COMPLETED

BRADLEY COUNTY

19-16-9 Southern Lumber Co., Ohio Oil Co. 2 ..... dry

COLUMBIA COUNTY

12-17-22 Gantt, George Dawley and others 1 ..... dry
25-19-22 Franks, Mitchell and others 1. dry
31-19-22 Mason, Von Hagen Syndicate 1 (loc.) ..... abd

NEVADA COUNTY

6-14-20 Haynie, Humble Oil & Refining Co. 2 10

OUACHITA COUNTY

24-15-16 Canada, J. E. Crosbie 2 45
34-15-15 Johnson, Phillips Petroleum Co. 7 80
33-15-15 Joyce, Phillips Petroleum Co. 20 ..... dry

PULASKI COUNTY

27-1n-11 Frazier, H. A. Stiles 3 ..... dry

UNION COUNTY

15-17-14 A. Gregory, O. W. Estes 1 ... gas
20-17-14 Gaddy, Gulf Refining Co. 2 ... gas
10-17-14 E. F. Gregory, E. C. Johnson 3 180
4-17-14 McCain, A. F. Hatcher 1 (drk.) abd
3-17-14 Slade, J. W. Hooser 4 ..... dry
10-17-14 Gregory, H. L. Hunt 4 100
7-17-13 El Dorado Realty Co., Lion Oil Refining Co. 1 (drk.) ..... abd
8-18-15 Fitzgerald, Louisiana Iron & Supply Co. 10 10
8-17-13 El Dorado Realty Co., Magna Production Co. 2 ..... dry
16-17-14 Diddle, Mazda Oil Corp. 1..... dry
6-17-13 Carroll heirs, Ohio Oil Co. 3.. 110
6-17-13 Frazier, Ohio Oil Co. 2 240
15-17-14 W. S. Rowland, Ohio Oil Co. 3 (loc.) ..... abd
9-17-14 Kelly, Oilwell Corp. 2-A 310
15-17-14 W. E. Gregory, Pure Oil Co. 6 .. 95
16-17-14 Doss, Root Refineries, Inc., 2 (drk.) ..... abd
16-17-14 Doss, Root Refineries, Inc., 3 (drk.) ..... abd
25-17-15 List, Tharpe Drilling Co. 1 .... dry

Wells completed 18
Production 1045
Gas 2
Gas production 84,918,690
Dry 9

MISSISSIPPI

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Alcorn	0	0	0	0	0	1	1
Calhoun	0	0	0	0	0	1	1
Chickasaw	0	0	0	0	0	1	1
Claiborne	0	0	0	0	0	2	2
Hinds	0	0	0	0	2	3	5
Humphreys	0	0	0	0	0	1	1
Itawamba	0	0	0	0	0	1	1
Jackson	0	0	0	0	0	1	1
Jasper	1	0	1	0	0	0	0
Lauderdale	0	0	0	0	1	0	1
Lee	0	0	0	0	0	1	1
Lincoln	0	0	0	0	0	1	1
Monroe	3	0	3	0	1	5	6
Rankin	0	0	0	0	0	2	2
Sharkey	0	0	0	0	0	1	1
Simpson	0	0	0	0	0	1	1
Stone	0	0	0	0	0	1	1
Washington	0	0	0	0	0	1	1
Webster	0	0	0	0	0	1	1
Total Feb.	4	0	4	0	4	25	29
Total Jan.	0	0	0	0	7	23	30
Difference	4	0	4	0	3	2	1

JASPER COUNTY

23-3n-10 Thigpen, Paulette & King 1.. dry

MONROE COUNTY

22-13-7 Seavy, Mawk Oil Co. 1 ..... dry
25-13-19 Acker, A. M. Sutton 1 ..... dry
30-14-17 Taylor, R. E. Zuendt 1..... dry

ALABAMA
Summary of Field Operations

	Rigs	Drlg.	Ttl.
Choctaw	1	0	1
Houston	0	1	1
Lawrence	0	2	2
Morgan	0	1	1
Marion	1	0	1
Washington	0	3	3
Total February	2	7	9
Total January	0	7	7
Difference	2	0	2

KENTUCKY-TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	3	2	1	0	0	4	4
Allen	8	0	8	0	0	6	6
Barren	2	15	0	0	0	2	2
Ohio	37	1,043	13	1	4	59	63
Daviess	37	739	15	1	5	42	47
Hancock	2	40	0	0	1	4	5
McLean	0	0	0	0	0	4	4
Henderson-Union	5	72	0	0	0	7	7
Webster	3	55	0	1	0	3	3
Simpson	1	0	1	0	0	0	0
Muhlenburg	1	0	1	0	0	1	1
Hopkins	1	0	0	1	0	8	8
Breckenridge	0	0	0	0	0	2	2
Butler	0	0	0	0	1	2	3
Meade	0	0	0	0	1	1	2
Trigg	1	0	0	1	0	0	0
Christian	0	0	0	0	4	2	6
Hardin	1	0	1	0	0	1	1
Caldwell	0	0	0	0	0	1	1
Wayne	2	5	1	0	0	3	3
Powell	0	0	0	0	0	1	1
Estill	1	0	1	0	0	5	5
Lee-Owsley	1	0	0	1	0	2	2
Wolfe	0	0	0	0	0	1	1
Johnson-Magoffin	5	55	0	0	4	2	6
Floyd	0	0	0	0	2	2	4
Clay	1	0	0	1	1	1	2
Knox	0	0	0	0	0	1	1
Menifee	1	6	0	0	0	0	0
Total Feb.	113	2,032	42	7	23	167	190
Total Jan.	108	1,446	45	2	14	168	182
Difference	5	586	3	5	9	1	8

WELLS COMPLETED
WARREN COUNTY

Bowling Green—J. L. Jenkins, Johnson & Julian 15 1
Tom McGinnis, William Gittings 6 .. 1
W. L. Seibert, McGinley-Randall Supply 3 ..... dry

Wells completed 3
Production 2
Dry 1

ALLEN COUNTY

Scottsville—Buddy Williams, Lee Moore & Son 3 ..... dry
T. J. Oliver, Snowden-McSweeney 35.. dry
Mack Hinton, Snowden-McSweeney 14 dry
M. E. Hood, I. J. Tapp & Co. 3 ..... dry
W. M. Dodson, Davis & Williams 2 .. dry
Fine Thomas, C. P. Tannehill 2 ..... dry
L. M. Duckett, Work & Son 2 ..... dry
Hack Ayres, Dodson Bros. & Young 1 dry

Wells completed 8
Dry 8

BARREN COUNTY

Glasgow—Browning, Hunt & Leach 8 .. 10
O. L. Gorby, Skelley L. Large 12 5

Wells completed 2
Production 15

OHIO COUNTY

Hartford—Baker Bros., Arnold & Co. 1 dry
D. A. Hendricks, Newton Field & Co. 1 dry
Winsett Femsler, Daley & Lowman 2 20
J. W. Mattox, Wood Oil 7 10
J. W. Mattox, Wood Oil 8 15
J. W. Mattox, Wood Oil 9 15
V. R. Ferguson, Wood Oil 3 25
J. C. Smith, Wood Oil 1 30
Ellis Bartlett, Hupp, Duff & Co. 1 .. 80
Sallie Thomas, Unknown parties 1... gas
Mary Cundiff, Jas. C. Ellis 8 40
Mary Cundiff, Jas. C. Ellis 9 40
Mary Cundiff, Jas. C. Ellis 10 50
M. Moseley, Jas. C. Ellis 3 280
Friendship School lot, Sirman Co. 1.. 100
Mark Renfrew, Sunnydale Oil & Gas 8 dry
J. W. Thomas, Fisher & Smith 1 .... dry
C. D. Westerfield, Creek Drlg. 6, 7 .. dry
J. J. Midkiff, Snowden-McSweeney 12 8
Howard hrs., Snowden-McSweeney 12 60
J. L. Ralph, C. D. Pratt & Co. 2 20
Jas. Dickens, D. T. Bollings & Co. 1.. dry
C. Westerfield, D. T. Bolling 3 ..... dry
Ed Crow, Wheeler & Botts 1 40
H. Trodgen, Hupp, Duff & Co. 1 .... dry
Peyton Royal, Lewis, Maxey & Ogle 2 40
A. P. Kelley, S. R. Nigh & Co. 9 .... dry
Kirk, Ohio Oil Co. 1 ..... dry
Chas. Roach, Ohio Oil 8 ..... dry
Mitchell-Berkhead, C. C. C. Oil 1 50
J. J. Miller, Brenner & Adams 1 20
J. W. Whittaker, Lyle, French & Co. 8 40
F. Howard, Carpenter & Co. 2 20
P. A. Taylor, Raydon & Berkhead 3.. 10
O. Ezell, Young & Lee 8 30
J. E. Hendrix, Ray Bigler & Co. 7 .. dry

Wells completed 37
Production 1043
Dry 13
Gas 1

DAVIESS COUNTY

Owensboro—M. C. Ruby, Eastern Gulf Oil 4 30
Joe McMahan, Eastern Gulf Oil 1.... dry
Alvey Tyler, Creek Drilling 8 ..... dry
J. F. Leet, Creek Drilling 4 45
Alfred Sutton, Wittmer Oil & Gas 2.. 12
Alfred Sutton, Wittmer Oil & Gas 3.. 15
K. N. Yeiser, L. C. Young 7 55
K. N. Yeiser, L. C. Young 8 25
Wm. Yeiser, L. C. Young 1 ..... dry
Louis May, Goldburg, Garrison & Young 1 ..... dry
Joe Anderson, Jas. C. Ellis 2 ..... dry
W. A. McCandless, Huff, Calderwood & Co. 2 ..... dry
Salmon, Huff, Calderwood & Co. 3 .. 50
Delmar Sharp, Huff, Calderwood & Co. 1 ..... dry
Wm. Tanner, Wood Oil 2 ..... dry
Oscar Wells, Smith, Randolph & Co. 7 40
Oscar Wells, Smith, Randolph & Co. 8 70
Tack Walker, Hunt & Co. 1 ..... dry
Asher hrs., Thompson & Co. 1 ..... dry
D. J. Fireline, Stimson & Co. 3 40
Rhodes, Botts, Swarthout & Co. 2 ... 35
Coomes, Bert Thompson & Tremor 1. 5
Fuqua, McMahan & Dalghren 3 .... dry
Frank Fuqua, McMahan & Dalghren 2 30
Jim Hayden, Imperial Oil & Gas Products 5 12
Jim Hayden, Imperial Oil & Gas Products 6 15
S. Hinton, Jetsan Oil 1 40
S. Hinton, Jetsan Oil 2 40
L. R. Howard, M. B. French & Co. 6.. dry
Ed Bowman, Daley & Lowman 1 .... dry
W. D. Neal, McHenry & Co. 1, 2 .... dry
Marion Taylor, Pops Development 4.. 30
Marion Taylor, Pops Development 5.. 100
Hinton, C. C. C. Oil 4 ..... gas
S. H. Easton, Kemrow-Cumberland Co. 2 20
W. G. Hayden, L. C. Young 8 30

Wells completed 37
Production 739
Dry 15
Gas 1

HANCOCK COUNTY

Pellville—Huff, F. A. Duke 1 15
Kate Travis, Lewis, Maxey & Co. 1 .. 25

Wells completed 2
Production 40

HENDERSON-UNION COUNTIES

Niagara—J. H. Triplett, Imperial O. & G. Products 1 10
J. H. Triplett, Imperial O. & G. Products 2 12
J. H. Triplett, Imperial O. & G. Products 3 15
J. H. Triplett, Imperial O. & G. Products 4 15
J. H. Triplett, Imperial O. & G. Products 5 20

Wells completed 5
Production 72

WEBSTER COUNTY

Sebree—Curry, E. W. Wilson & Co. 1.. 20
S. F. Powell, H. Z. Clark & Co. 1 .. 35
Thornsbury, Iley Browning 1 ..... gas

Wells completed 3
Production 55
Gas 1

SIMPSON COUNTY

Franklin—M. F. Mitchell, Ohio Oil 1 .. dry

MUHLENBURG COUNTY

Central City—J. B. Jackson, Ohio Oil 1 dry

HOPKINS COUNTY

Madisonville—F. O. Baker, Ohio Oil 1.. gas

TRIGG COUNTY

Cadiz—Near Caladonia, T. H. Colvin 1. gas

HARDIN COUNTY

Elizabethtown—Arthur Deckard, Petroleum Expltn. 1 ..... dry

WAYNE COUNTY

District 2—H. C. Coffey, Coffey Oil 1.. dry
District 5—Randall Ramsey, Barrier Oil 17 5

Wells completed 2
Production 5
Dry 1

ESTILL COUNTY

District 7—Clayburn Tipton, Superior Oil Corp. 15 ..... dry

LEE-OWSLEY COUNTIES

Beattyville—Sidney Caudill, Petroleum Expltn. 1 ..... gas

JOHNSON-MAGOFFIN COUNTIES

District 27—Nancy Vanderpool, Baldwin & Morgan 4 15
District 29—Hernando Grace, Hudson & Collins 8 5
District 30—Frank Conley, Boston-Southwestern Oil & Gas 16 5
District 31—B. F. Whitt No. 2, Hupp & Duff 11 20
J. M. Frazier, Huff & Duff 7 10

Wells completed 5
Production 55

CLAY COUNTY

Manchester—Keith-Campbell, Petroleum Expltn. 1 ..... gas

MENIFEE COUNTY

Frenchburg—H. & D. Wells, Wells Oil & Gas 4 6

TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clay	3	60	1	0	1	11	12
Jackson	0	0	0	0	0	2	2
Marshall	0	0	0	0	0	1	1
Decatur	0	0	0	0	0	2	2
Total Feb.	3	60	1	0	1	16	17
Total Jan.	1	0	1	0	3	16	19
Difference	2	60	0	0	2	0	2

WELLS COMPLETED
CLAY COUNTY

Celina—Nevins, Unknown 1 ..... dry
Murdock, Carnahan & Co. 3 35
Maynard, Celina-T Ten Oil 2 25

Wells completed 3
Production 60
Dry 1

ROCKY MOUNTAIN AREA

MONTANA
Summary of Field Operations

District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Cat Creek	0	0	0	0	0	3	3
Kevin-Sunburst	1	0	1	0	12	10	22
Pondera	7	500	0	0	12	15	27
Misc.	3	20	0	2	4	67	71
Total Feb.	11	520	1	2	28	95	123
Total Jan.	26	2,508	3	0	20	105	125
Difference	15	1,988	2	2	8	10	2

MONTANA
WELLS COMPLETED

10-21- 1 Lee, Wm. J. Maham et al.... dry
15-27- 4 Copley, P. & R. Oil Co. 4..... 20
15-27- 4 State Bank, Midwest Refg. 18 40
15-27- 4 Kingsbury, Texas Prod. Co. 9. 40
15-27- 4 Copley, Texas Prod. Co. 7..... 190
9-27- 4 Jones, Fulton Prod. Co. 3..... 150
14-27- 4 Copley, Midwest Refg. Co. 34. 10
15-27- 4 State Bank, Midwest Refg. 16. 50
5-25- 1 Skogg, Archer Montana 1..... 20
25- 1-21 Lake Basin, Crystal Carbon 7 gas
27-37- 4 Orr, Western Nat. Gas Co. 1.. gas

Completions 11
Production 520
Dry 1
Gas 2

WYOMING
Summary of Field Operations

County or District—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Salt Creek	3	2,544	1	0	1	4	5
Big Horn	1	0	0	1	0	10	10
Carbon	1	30	0	0	0	12	12
Fremont	0	0	0	0	1	11	12
Hot Springs	0	0	0	0	1	3	4
Lincoln	0	0	0	0	2	7	9
Natrona (Exc. Salt C.)	0	0	0	0	2	4	6
Park	0	0	0	0	2	30	32
Sweetwater	0	0	0	0	3	10	13
Sublet	0	0	0	0	1	22	23
Weston	2	90	0	0	0	3	3
Uinta	0	0	0	0	6	11	17
Misc.	0	0	0	0	3	11	14
Total Feb.	7	2,664	1	1	22	138	160
Total Jan.	4	651	1	0	28	144	172
Difference	3	2,013	0	1	6	6	12

WELLS COMPLETED

35-40-79 NW, Wyo. Associated 3-SD-2.2328
7-40-79 Coombs Dev. Co. 1..... dry
26-40-79 SE, Wyo. Oil Fields Co. 19 .. 206
29-56-97 Gov't., Utah South. Oil Co. 3.. gas
27-20-78 H. & C., Ohio Oil Co. 2..... 30
24-46-64 Jas. McCullough et al 1..... 40
13-46-64 Osage Oil Trust 3..... 50

Wells completed 7
Production 2664
Gas 1
Gas production 15,000,000
Dry and abandoned 1

COLORADO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Fremont	6	80	2	0	1	14	15
Jackson	1	0	1	0	0	5	5
Larimer	1	0	1	0	2	6	8
Moffat	2	700	1	0	5	8	13
Pueblo	0	0	0	0	10	2	12
Routt	1	27	0	0	1	6	7
Misc.	0	0	0	0	1	34	35
Total Feb.	11	807	5	0	20	75	95
Total Jan.	5	1,048	1	0	9	75	84
Difference	6	241	4	0	11	0	11

WELLS COMPLETED

2-19-70 Isabel, Continental Oil Co. 1.. dry
35-18-70 Ketchum, Pleasant O. & L. 1. abd
11-19-70 Vezetti, Continental Oil Co. 2. 50
3-18-70 Clem Lovisone 1..... 2
3-18-70 Clem Lovisone 2..... 3
35-18-70 Hall, Continental Oil Co. 3.... 25
9- 6-82 Goettler, North Park Oil 1.... dry
30- 8-68 Messerschmidt, Cont. Oil Co. 1 abd
27-4n-92 Shaw, Midwest Ref. Co. 3-SD. 700
28- 4-92 Sales, W. F. McCormick 1.... abd
17- 6-86 State, Hynds Oil Co. 2..... 27

Wells completed 11
Production 807
Dry and abandoned 5

NEW MEXICO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Chaves	2	0	2	0	3	4	7
Eddy	3	165	1	0	3	5	8
Lea	9	0	5	4	5	19	24
McKinley	3	0	3	0	2	7	9
San Juan	3	0	3	0	4	15	19
Union	1	0	1	0	0	0	0
Misc.	0	0	0	0	7	14	21
Total Feb.	21	165	15	4	24	64	88
Total Jan.	5	0	4	1	21	80	101
Difference	16	165	11	3	3	16	13

WELLS COMPLETED

8-11-23 Forsyth, Gibson Oil Corp. 1... abd
5-10-24 Roswell, Barrendo O. & G. 1.. abd
33-18-28 Yates, Snowden & McSweeney 4 abd
4-18-28 State, Operators Oil 1..... 15
13-17-30 Jackson, Flynn, Welch & Yates 1 150
11-16-32 Elliott et al 1..... abd
15-17-32 Beardsley, Maljamar O. & G. 1 abd
15-17-32 Beardsley, Maljamar O. & G. 2 abd
26-23-36 Lynn, Marland Prod. Co. 1.... gas
9-26-37 Cagle, Texas Prod. Co. 1..... gas
34-21-36 Ramsey, Gypsy Oil Co. 1..... gas
5-26-33 Maechtel, Hill & Abel 1..... dry
8-20-33 Brooks, Marland Prod. Co. 1.. dry

19-25-37 Sholes, Marland Prod. Co. 1... gas
22-18-10 Goodnight, Inland Oil Co. 1... abd
30-18- 8 Pettit, H. L. Williams 1..... dry
29-18- 8 Santa Fe, H. L. Williams 1... dry
9-29-11 Lanier, Rio Grande Dev. 1.... abd
23-29-11 James, Fidelity O. & R. Co. 2. abd
23-17-16 Azal, McGregor et al 1..... abd
14-24-30 Passemonte, Sun State Pet. 1.. dry

Wells completed 21
Production 165
Gas production 180,000,000
Dry and abandoned 15

UTAH

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Total Feb..	0	0	0	0	4	30	34
Total Jan..	2	0	2	0	3	30	33
Difference	2	0	2	0	1	0	1

CENTRAL OHIO

CENTRAL OHIO

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashland	11	63	3	4	9	15	24
Medina	2	12	1	0	1	6	7
Lorain	1	0	0	1	4	6	10
Wayne	2	0	0	2	4	11	15
Holmes	3	60	1	1	7	3	10
Cuyahoga	2	0	0	2	0	2	2
Richland	2	0	0	2	4	2	6
Knox	4	75	1	2	3	7	10
Coshocton	3	7	1	0	1	4	5
Summitt	8	0	3	5	4	11	15
Licking	12	103	2	2	5	16	21
Muskingum	6	427	2	0	3	11	14
Athens	17	2	7	9	8	15	23
Meigs	10	43	5	0	5	10	15
Jackson	3	0	0	3	11	8	19
Vinton	3	5	1	1	1	1	2
Stark	0	0	0	0	1	0	1
Lawrence	0	0	0	0	0	3	3
Pickaway	0	0	0	0	0	1	1
Gallia	1	0	0	1	0	1	1
Tuscarawas	0	0	0	0	0	1	1
Fairfield	0	0	0	0	1	3	4
Guernsey	3	25	0	2	7	6	13
Total Feb. ..	93	822	27	37	79	143	222
Total Jan. ..	82	517	26	35	78	155	233
Difference...	11	305	1	2	1	12	11

WELLS COMPLETED
ASHLAND COUNTY

Hanover—Albert Fritz, Ohio Fuel Gas 2-3,344 ..... dry
Vermillion—John Obrecht, M. & S. Bartner 1 ..... gas
Orange—C. P. Miller, The Logan Gas 1-3,058 ..... dry
Chas. N. Schooley, The Logan Gas 1-3,068 ..... gas
Royal J. Welch, Ohio Fuel Gas 1-3,410 gas
R. Brubaker, The Kemrow Co. 1 .... gas
Perry—W. E. Strine, Robinson & Co. 9.. 3
W. E. Strine, Robinson & Co. 10 .... dry
Eliza DeVault, Curtis & Co. 7 20
Mohican—Guy Humm, W. J. Smith 1 .. 25
J. J. Winbigler, Jones & Co. 3 15

Wells completed 11
Production 63
Dry 3
Gas 4

MEDINA COUNTY

Liverpool—W. F. Shaffer, The Preston Oil 1-268 12
York—Ernest Fahrian, Miller Longfellow 3 ..... dry

Wells completed 2
Production 12
Dry 1

LORAIN COUNTY

Carlyle—P. K Clark, Daugherty & Co. 2 ..... gas

WAYNE COUNTY

Congress—W. O. Fulton, Ohio Fuel Gas 1-3,351 ..... gas
Lillian B. Wood, Ohio Fuel Gas 2-3,352 gas

Wells completed 2
Gas 2

HOLMES COUNTY

Hardy—H. H. Nethro, The Preston Oil 1-1,253 ..... dry
F. M. Nowels, East Ohio Gas 4 60
Monroe—J. T. Patterson, Arkansas Fuel Oil 2 ..... gas

Wells completed 3
Production 60
Dry 1
Gas 1

CUYAHOGA COUNTY

Olmstead—L. M. Conant, L. M. McGrath 1 ..... gas
Strongville—Claude Carpenter, Ohio Fuel Gas 1-3,049 ..... gas

Wells completed 2
Gas 2

RICHLAND COUNTY

Monroe—Jane M. Ohler, Ohio Fuel Gas 1-3,393 ..... gas
S. M. Douglas, Ohio Fuel Gas 3-3,399 gas

Wells completed 2
Gas 2

KNOX COUNTY

Brown—J. E. A. Mix, Ohio Fuel Gas 1-3,369 ..... dry
Robert Kunkle, Upham Gas 4 ..... gas
Jackson—Parker J. Mavis, The Pure Oil 1 75
Pike—L. H. Colgin, Ohio Fuel Gas 1-3,395 ..... gas

Wells completed 4
Production 75
Dry 1
Gas 2

COSHOCTON COUNTY

Monroe—Peter Lepley, Ohio Fuel Gas 2-3,105 ..... dry
Clark—A. G. Epley, The Ohio Oil 2 2
Pike—J. & E. Lake, Stevenson Bros. 1 5

Wells completed 3
Production 7
Dry 1

SUMMITT COUNTY

Franklin—Isaac Hose, F. A. Brendall & Co. 1 ..... gas
Levi Stump, F. A. Brendall & Co. 1 .. gas
George Grubb, F. A. Brendall & Co. 1 gas
T. A. Rennie, F. A. Brendall & Co. 1 gas
Lloyd Biller, East Ohio Gas 2 ..... dry
O. C. Barber, Columbia Chemical 2.. dry
Spring—George Chenowith, Zinkel & Co. 1 ..... dry
Copley—J. T. Hankey, Wiser Oil 1 .... gas

Wells completed 3
Dry 2
Gas 5

LICKING COUNTY

Fallsburg—N. E. Morris, The Preston Oil 4 2
Ida M. Cochran, Emerald Pet. 2 32
John E. Martin, Emerald Pet. 3 10
Lida Martin, Wittmer Properties trus. 3 ..... dry
Perry—Jerry Cullison, Hulse & Kunditz 1 3
Jas. Wright, The Preston Oil 12 12
Jacob Lethers, Settles Oil 5 ..... gas
Sarah Rector, Hope Const. & Refg. 1 10
Emmet Hoover, McClay Bros. & Co. 1 gas
Franklin—Motherspaw, Armstrong & Lytle 11 3
Hopewell—Art Orr, The Pure Oil 2 31
Newark—Buckingham hrs, Wehrle Gas 1 ..... dry

Wells completed 12
Production 103
Dry 2
Gas 2

MUSKINGUM COUNTY

Jackson—W. E. Helphrey, Hope Const. & Refg. Co. 4 190
Zonetta Bros., Hope Const. & Refg. 3 45
Jos. Varner, Hope Const. & Refg. 3.. 190
Highland—Elmer J. Duff, Fetty & Louchey 1 2
Falls—R. E. Reehl, L. W. Luther & Co. 2 ..... dry
G. C. Ellenberger, Wm. Kline & Co. 1 dry

Wells completed 6
Production 427
Dry 2

ATHENS COUNTY

Ames—J. E. Gifford, Ohio Fuel Gas 5-3,338 ..... gas
J. T. Fleming, Ohio Fuel Gas 1-3,374. gas
F. E. Phillips, Mosure & Co. 2..... dry
Lima Dean, Orondorf & Co. 3 ..... gas
J. T. Fleming, Kiggins & Co. 2 ..... gas
Florence Porter, Wiser Oil 1 ..... gas
Berne — C. D. Henry, Ohio Fuel Gas 1-3,420 ..... gas
E. C. Glass, Ohio Fuel Gas 3-3,432 ... gas
W. C. Wells, Bailey Oil & Gas 2 ..... gas
Carthage—Ida B. Davis, Hope Const. & Ref. 4 2
Trimble—Geo. M. Jones, Ohio Fuel Gas 2-3,317 ..... dry
Henry Angle, Glouster Oil & Gas 1 .. dry
Athens—Joe Nicholson, Slade & Irwin 2. dry
Troy—Chas. Cole, Ohio Fuel Gas 1-3,343 dry
Lodi—Geo. King, Ohio Fuel Gas 1-3,340 dry
R. O. Burson, Ohio Fuel Gas 1-3,341. dry
T. R. Phillips, Ohio Fuel Gas 1-3,377. gas

Wells completed 17
Production 2
Dry 7
Gas 9

MEIGS COUNTY

Sutton—Frank Stowe, Ohio Fuel Gas 1-3,358 ..... dry
State of Ohio, Ohio Fuel Gas 1.-2,435. 4
W. J. Krauter, Pure Oil 5 2
Giles, Hysell & Co., Davis Oil 6 8
M. Ebenbach, Tyree & Co. 2 4
Jos. Stobart, Tyree & Co. 6, 7 ..... dry
H. D. Carnahan, C. D. Sloan & Co. 7. dry
David B. Cross, the Wehrle Co. 2 ... 25
Rutland—D. A. Thomas, Frank Leifhart & Co. 2 ..... dry

Wells completed 10
Production 43
Dry 5

JACKSON COUNTY

Franklin—Ida E. Jones, Ohio Fuel Gas 3-3,322 ..... gas
Henry Lefter, Ohio Fuel Gas 1-3,362. gas
Lick — L. Cherrington, Ohio Fuel Gas 1-3,285 ..... gas

Wells completed 3
Gas 3

VINTON COUNTY

Vinton—Lee H. Quick, Townsend & Co. 1 ..... gas
Elk—Fee, McArthur Brick 1 ..... dry
Knox—Garfield Brooks, Co-operative Oil 1 5

Wells completed 2
Production 5
Dry 1
Gas 1

GUERNSEY COUNTY

Cambridge—Virgil Ross, Gordon, Oil 1.. 25
Adams—Mary Pozzo, T. V. McLaughlin 3 ..... gas
Jackson—R. F. Dennis, Ohio Fuel Gas 3-3,419 ..... gas

Wells completed 3
Production 25
Gas 3

EASTERN FIELDS

Summary of Completed Wells

Fields—	Comp.	Prod.	Dry	Gas
Allegany	18	42	0	0
Bradford	162	266	0	0
Middle Field	4	6	0	0
Venango-Clarion	23	37	2	4
Butler-Armstrong	13	11	3	1
S. W. Pa.	13	261	1	5
West Virginia	56	121	9	26
S. E. Ohio	68	1,367	14	7
Total Feb.	357	2,112	29	43
Total Jan.	329	1,826	29	53
Difference	28	286	0	10

Summary of Work

Fields—	Under Rigs	Way Drg.	Ttl.
Allegany	7	16	23
Bradford	30	95	125
Middle Field	0	3	3
Venango-Clarion	1	21	22
Butler-Armstrong	4	15	19
S. W. Pa.	5	23	28
West Virginia	40	113	153
S. E. Ohio	28	75	103
Total Feb.	115	361	476
Total Jan.	93	309	402
Difference	22	52	74

WELLS COMPLETED
ALLEGANY FIELD

Fee, A. H. Ashworth 3
Fee, W. J. Hughes et al 2
Fee, F. L. Putnam et al ..... water
Fee, George W. and Phoebe Birtcil 1
Coast et al, M. J. Crowley et al 3
Fee, Mrs. G. J. Richardson et al 3
Fee, A-C-A Oil Corp. 5
F. L. Putnam, F. L. Putnam et al 2
Fee, Martin Brothers et al 2
Fee, Hill, Hughes & Kellar 4
Fee, M. H. Lavens et al 5
Forest Oil Corp., 3 oil wells 3
Fries, N. V. V. Franchot 5
Herrick & Shaner, N. V. V. Franchot.. 2
Fee, Leland Oil 1
Kinley Oil, Pure Penn Oil 2

Wells completed 18
Production 43
Water 1
Rigs, 7; drilling, 16.

BRADFORD FIELD

Middaugh, A. L. & M. L. Lilly 5
Middaugh, A. L. & M. L. Lilly 5
Scio, C. A. Duke 2
Irvine, C. E. Potter 2
Russell, Potter & Devore 2
Kenyon, Minnich estate 3
Moore, C. H. Williams 3
Fee, Swing Oil ..... pressure
Borden, T. B. Wilcox 2
Kapp, T. H. Kervin, Jr. 1
Kapp, T. H. Kervin, Jr. 1
Werthman, D. J. Moody 2
Doubleday, Pressure Oil 2
Borden, Tapp & Windgrove 2
Duke, A. Stover 3
Eisb, W. J. Frederick 1
Eisb, W. J. Frederick 1
Devlin, B. Devlin 3
Ekas, South Penn (9 wells) 9
Whipple, South Penn 2
Devlin, Penn Bradford 3
Hausman, H. Hausman 1
Gibson, J. H. Gibson et al 3
Wright, S. H. Elder et al 1
Mantz, L. P. Kinley et al 2
Bingham 410, S.P.O. 40 1
Bingham 423, S.P.O. 19 1
Bingham 439, S.P.O. 119 1
Bingham 400 acres, S.P.O. 10 1
Bingham 533, S.P.O. 101 1
H. E. Smith, S.P.O. 181 1
Bingham 45-474, S.P.O. 100 1
Bingham 533, S.P.O. 102 1
Bingham 533, S.P.O. 103 1
H. E. Smith, S.P.O. 174 1
H. E. Smith, S.P.O. 183 1
Plan A. Melvin, S.P.O. A-020 ..... press
Plan A Melvin, S.P.O. A-023 ..... press
Bingham 190-196, S.P.O. 80 1
Burdick, S.P.O. 05 ..... press
Plan A Melvin, S.P.O. A-018 ..... press
Plan A Melvin, S.P.O. A-019 ..... press
Plan A Melvin, S.P.O. A-020 1
Plan A Melvin, S.P.O. A-022 ..... press
Plan A Melvin, S.P.O. A-024 ..... press
Plan A Melvin, S.P.O. A-025 ..... press
Burdick, S.P.O. 014 1
Midland-Taylor, S.P.O. 49 1
B. I. Taylor, S.P.O. 33 1
Plan A Melvin, S.P.O. A-15 1
Plan A Melvin, S.P.O. A-14 1
Burdick, S.P.O. 62 1
Lot 14, S.P.O. A-4 1
Bingham 151-154, S.P.O. 42 1
Lee, Hallock & Weston, S.P.O. 104 1
Tract 23, Hazelwood Oil 115 1
Tract 28, Hazelwood Oil 75 1
Plan A Tract 23, Hazelwood Oil 02 ... press
Plan A Tract 23, Hazelwood Oil 03 ... press
Plan A Tract 23, Hazelwood Oil H-2 ... 1
Plan A Tract 23, Hazelwood Oil H-8 .. 1
Plan A Tract 23, Hazelwood Oil H-12 .. 1
Forest Oil Corp., 8 oil wells 8
Forest Oil Corp., 7 water wells ..... press
Forest Petroleum Corp., 4 wells 4
Forest Petroleum Corp., 15 wells .. water
Bingham 212, Esther Oil 71 1
Bingham 389, D. W. Daly No. 1, 60 5
Bingham 386, McKean County Trust Co. 49 1
Bingham 386, McKean County Trust Co. 51 ..... water
Riddell estate, South Penn Oil 1
Riddell estate, South Penn Oil 1
Riddell estate, South Penn Oil ..... water
W. Weston, Jr., trustee, S.P.O. 1
Fee, W. R. & W. W. Parmeter ..... water
Fee, M. C. Reidy 3
E. J. Burns et al, E. Daly 1
Fee, W. T. Piper 4
Willets estate, James W. Looker 3
Fee, Dallas Oil Co. 4
Fee, Dallas Oil Co. 8
T. H. Kennedy, James W. Looker 3
N. V. V. Franchot, Jones & McCord 1
Fee, Hazelwood Oil Co. 2
Fee, R. O. Landers et al 1
Ree, R. O. Landers et al 5
N. V. V. Franchot, Penn Brook O. 2
N. V. V. Franchot, D. & P. Oil 1
Kinley Oil Co., Dana & Dana 1
Fee, Dana & Dana 1
Fee, L. G. Dana 1
Griffith et al, Tanner & McKean Co. Trust Co. 40 1
Bingham 400 South Penn Oil 1
Bingham 450, South Penn Oil 1
Bingham 151, South Penn Oil 1
Bingham 214, Associated Prod. 1
Bingham 214, Associated Prod. 1
Bingham 568, Associated Prod. 1
Bingham 530, South Penn Oil 1
Bingham 533, South Penn Oil 1
Bingham 533, South Penn Oil 1
Bingham 439, South Penn Oil 1
Charles Hedlund et al, Holmes Oil 1
Fee, W. C. Kennedy Co. 1
Bingham 190, South Penn Oil 1
Fee, T. H. Kennedy 6 1
Bingham 394, Soph & Wright 1
Bingham 395, South Penn Oil 1
Bingham 398, South Penn Oil 1
Bingham 405, South Penn Oil 1
Bingham 580, Associated Prod. ..... water
Fee, L. G. Schenfield 1
Potter, Burdick & Stover 1
Fee, Mix Creek Oil (3 holes) ..... water
Fee, Mix Creek Oil 1
Hoffman estate, Bell & Loop 1
Fee, D. M. Hoffman estate 1
Fee, Messer Oil 1
Rounds, N. V. V. Franchot ..... water
Fee, G. W. Smith estate 14
Fee, Curtis & Dunlavey 3
Rounds, J. W. Kaufman 10

Wells completed 142
Production 260
Water and pressure 12

MIDDLE FIELD

Bauer, H. Anderson 1
Lot 10, Gibson & Wright 4 1
Lot 109, Clarendon P. & R. 23 1
Goal, Goal Oil 65 2

Wells completed 4
Production 6

VENANGO-CLARION

Best, A. M. Hulings 4 ..... dry
Stiles tract 74, S. Y. Ramage 80 ..... gas
Stiles tract 74, S. Y. Ramage 81 1
Huff, Robert F. Whitling 17 1
McKee, G. A. Eakin 26 1
Henderson, S. Y. Ramage, Jr., 49 1
Surrena, C. Surrena 24 1
Kellerman, H. B. Melat 27 1
Fisher, F. C. Leach 19 1
Coast, J. D. & C. D. Berry 24 ..... abd
Foster, Smith & O. C. Nat. Bank 18 .. 1
Schwab, J. E. Keverline 7 1
McLaughlin, Fryburg Motor 2 ..... gas
Bush, Frbyburg Motor 1 ..... gas
Fisher, Hepler, Blair et al 30 1
Clarion—
Whitehill, Citizens Trust 12 1
Cohlheep, Dempseytown Gas 1 ..... gas
Hess, H. J. Crawford 16 1
Hess, Alum Rock Gas 12
Detwiller, Alum Rock Gas 3 1
Kiser, F. Youkers 1 ..... dry
Thompson, Carroll & Vasey 1 1
Brown, Braden et al, S. E., O. W. & S. C. Jordan 3 1

Wells completed 22
Production 57
Dry 2
Gas 4
Rigs, 1; drilling, 21.

BUTLER-ARMSTRONG

Berger, J. A. Leidecker 1 ..... dry
Wolfe, T. W. Phillips G. & O. 1 1
Burr, William Peffer 1 1
Duncan heirs, J. A. Elliott et al 8 ..... dry
Twentier, E. Boyer et al 2 ..... dry
Peffer, E. H. Hutchinson et al 1 ..... gas
Carpenter, G. D. Carpenter 9 1
McGinley, Ravenwood Oil 5 1
Blair & Stewart, Blair & Stewart 5 2
Cumberland, Campbell & Sherwin 4 1
Mahood, Veil-Lake et al 3 1
McKee, McKee & Pollock 15 2
Sedwick, W. B. Sedwick 1 1

Wells completed 13
Production 11
Dry 2
Gas 1
Rigs, 4; drilling, 15.

SOUTHWEST PENNSYLVANIA

WELLS COMPLETED
BUTLER COUNTY

Voegley, E. W. & L. Eisler 1..... gas
Penrose, Phillips G. & O. Co. 2..... gas
Harvey, Phillips G. & O. Co. 3..... 150
Trees, Bream Co. and Trees 1..... 10
Trees, Bream Co. and Trees 3..... gas
Trees, Bream Co. and Trees 4..... 75
Price, Elliott & Reimer 2..... gas

WASHINGTON COUNTY

McMurray, McMurray O. & G. Co. 1.... 11

BEAVER COUNTY

Bambrick, McDonald & Co. 1..... 2
Prosnick, Abram Murdock & Co. 54 .. 1
Economy tract, Laughner O. & G. Co. 95 10

GREENE COUNTY

Inghram-Wilson, Carnegie Gas Co. 1.. gas
Porter, Nuss & Co. 1..... dry

Wells completed 13
Production 261
Dry 1
Gas 5

SOUTHEAST OHIO

WELLS COMPLETED
MONROE COUNTY

Bode, Trimlin est. 15..... 35
Stoffel, Stoffel & Co. 1..... 2

PERRY COUNTY

Crist, Preston Oil Co., 2..... 20
Soffel, Preston Oil Co. 1..... 190
Petty, Planet Oil Co. 2..... 20
H. V. P. Co., Chartiers Oil Co. 209 .. 50
Hickelson, Slack & Co. 1..... dry
Burley-Winter, Cline & Co. 5..... 70
Milligan, O. F. G. Co. 1..... gas

Lazarle, Ohio F. G. Co. 1 50
Baker, Pure Oil Co. 2 180
Wilson, Buckeye Supply Co. 1 5
Crowley, Crowley, Carr & Co. 1 50
Bonsculp, Dunn Mar O. & G. Co. 1 5
Orr, Pure Oil Co. 2 35

HOCKING COUNTY

Stone, Gordon Oil Co. 3 15
Meldrim, Gordon Oil Co. 3 ..... dry
Lowe, Griffin Prod. Co. 3 5
Tracey, Kachelmacher est. 30 ..... dry
Hazelton hrs., Big Ten Oil Co. 6 ..... dry
Morton, Squire & Co. 5 ..... dry
Marks, Preston Oil Co. 3 5

GUERNSEY COUNTY

Gable, Warson & Co. 1 10
Ross, Gordon Oil Co. 1 10
Dennis, Preston Oil Co. 3 ..... gas

HOLMES COUNTY

Nowells, East Ohio Gas Co. 4 20
Nethrow, Ohio F. G. Co. 1 ..... dry
Patterson, Ark. Fuel Oil Co. 2 ..... gas

LICKING COUNTY

Mauk, Preston Oil Co. 1 5
Wright, Preston Oil Co. 11 10
Wright, Preston Oil Co. 12 10
Helphrey, Hope C. & R. Co. 4 190
Brown, Hope C. & R. Co. 3 45
Cochran, Emerald Pet. Co. 2 35
Martin, Emerald Pet. Co. 3 12
Motherspaw, Peoples B. & T. Co. 11 2
Morris, Preston Oil Co. 4 10

MUSKINGUM COUNTY

Reehl, Luther & Co. 2 ..... dry

NOBLE COUNTY

Maginis, M. S. Lee 6 5
Harper hrs., Harper Bros. 1 5
Feldner, Sailing & Co. 2 3
Morris, Morris & Co. 1 ..... dry

ATHENS COUNTY

Angler, Fred Jonas 1 ..... dry
S. C'k. C. Co., O'Connor & Co. 18 3
Curtis, Smith & Co. 7 ..... dry
Phillips, Morris & Co. 2 ..... dry
Thompson, D. T. Orndoff 1 ..... gas
Harris, W. S. Harris 4 1
Thompson, D. T. Orndoff 2 ..... gas
Quick, Townsend & Co. 1 ..... gas
Brooks, Co-operative Oil Co. 1 3

KNOX COUNTY

Mavis, Pure Oil Co. 1 50
Varner, Hope C. & R. Co. 3 190

MEIGS COUNTY

Cross, Miller & Co. 1 20
Stowe, Preston Oil Co. 1 ..... dry
State lands, Preston Oil Co. 2 2
Carnahan, Sloan & Co. 7 ..... dry
Stobert, Sloan & Co. 4 ..... dry
Krider hrs., Pure Oil Co. 5 2
New Pgh. C. C., R. A. Tyree 2 3
Hysell, Davis Oil Co. 6 4

WASHINGTON COUNTY

Mendenhall, Burkhart & Co. 2 2
Covey, D. R. Greenlees 1 1
Meister-Blair, Meister & Blair 4 ..... gas
Ludington, Creighton & Co. 1 1
Hall, Shay, McMulling Co. 2 20
Walsh, Preston Oil Co. 3 5

BELMONT COUNTY

Colpitts-Boswell, Preston Oil Co. 3 1

MEDINA COUNTY

Brinkey, O. K. O. & G. Co. 2 20

Wells completed 68
Production 1367
Dry 14
Gas 7

WEST VIRGINIA
WELLS COMPLETED
LEWIS COUNTY

Bargeloff, McCall Drlg. Co. 1 ..... gas

WETZEL AND TYLER COUNTIES

Eddy, McIntyre Bros. O. & G. Co. 1 ..... gas
Swiger, So. P. O. Co. 6 2
George, Hope C. & R. Co. 8 ..... gas
Smith, J. H. Pents 1 ..... dry

MARSHALL COUNTY

Allman, Mfrs. L. & H. Co. 1 2

HANCOCK COUNTY

Warrick, Miller & Co. 1 ..... gas
McIntosh hrs., J. J. McIntosh 1 5

DODDRIDGE COUNTY

Williamson, Finley & Co. 1 ..... dry

RITCHIE COUNTY

Collins, Hope C. & R. Co. 1 10
Vincent, Carnegie Gas Co. 1 ..... gas
Wilson, E. E. Pope 4 3
McCosch hrs., Huff & Co. 4 3
Ayers, Hope Gas Co. 1 10
McCullough, Chegwidi & Co. 5 8
Raymond, F. Maxwell 1 ..... dry
Swisher, Lincoln Oil Co. 3 1
Layfield, Woodford & Goff 1 ..... gas
A. Ayers, F. Deem 1 3
Wilson, So. P. O. Co. 16 10

GILMER COUNTY

Gainer, Gainer Farm Oil Co. 4 ..... dry
Riddle Bros., McCall Drlg. Co. 5 5
Wilson, Hope C. & R. Co. 1 ..... gas
Nicholson, Hope C. & R. Co. 2 ..... gas

CLAY COUNTY

B. S. & G., U. F. G. Co. 2,534 ..... gas

WIRT COUNTY

Adams, Dailey Bros. 1 1
Lupa, Maxwell & Co. 1 ..... dry
Rathbone tract, Roberts Bros. 160 ..... dry
Lewis, Smith Oil Co. 1 ..... dry

PLEASANTS COUNTY

Bier, Dinsmoor & Co. 17 ..... dry

ROANE COUNTY

Stockly, So. P. O. Co. 80 5
Stockly, So. P. O. Co. 85 6
Stockly, So. P. O. Co. 89 10
Nixon, So. P. O. Co. 5 10
Smith, G. L. Cabot 2 3
Morford, Grow & Decker 2 ..... gas

CALHOUN COUNTY

Batt hrs., W. H. Bickel 5 ..... gas
Harris, Lewis & Co. 1 ..... gas
Hamilton, L. P. Bickel 1 ..... gas
McCoy, F. F. McIntosh 3 ..... gas
Hays hrs., W. H. Bickel 1 ..... gas

KANAWHA COUNTY

King Land Co., U. F. G. Co. 2,549 ..... gas

LINCOLN COUNTY

Oxley, U. F. G. Co. 1,891 ..... gas
Horse C'k. tract, U. F. G. Co. 1,981 ..... gas
Lovejoy, Hobbs Bros. 1 ..... gas
Horse C'k. tract, U. F. G. Co. 1,894 ..... gas

MINGO COUNTY

Vance, Thompson Bros. 1 ..... gas
Red Jacket C. C. Co., Red Jacket C. C. Co. 5 ..... gas

JACKSON COUNTY

Brown, Heck Oil Co. 1 5
McCarty, So. P. O. Co. 2 20
Warner, Heck Oil Co. 1 10

BOONE COUNTY

Little Coal Co., Owens B. & M. Co. 10 ..... gas
Peytonia C. & L. Co., Owens B. & M. 19 ..... gas
Hill, Mountain States Gas Co. 3 ..... gas

WAYNE COUNTY

Saunders, Chartiers Oil Co. 1 ..... dry
Jackson, Chartiers Oil Co. 1 ..... gas

Wells completed 56
Production 121
Dry 9
Gas 26

LIMA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Wood	1	24	0	0	3	4	7
Hancock	1	50	0	0	0	1	1
Allen	1	15	0	0	3	1	4
Auglaize	0	0	0	0	0	1	1
Mercer	2	4	0	1	0	2	2
Seneca	3	20	1	1	0	1	1
Lucas	1	0	1	0	0	1	1
Hardin	1	0	1	0	0	3	3
Darke	1	8	0	0	0	0	0
Huron	0	0	0	0	0	1	1
Total Feb.	11	121	3	2	6	15	21
Total Jan.	8	92	2	1	6	21	27
Difference	3	29	1	1	0	6	6

WELLS COMPLETED
WOOD COUNTY

Plain—B. P. Stratton, M. B. Chidester, 5, 6, 7 ..... abd
Middleton—H. E. Berry 2 24

Wells completed 1
Production 24
Abandoned 3

HANCOCK COUNTY

Eagle—Frank Freed, R. T. Rittenhouse 6 50

ALLEN COUNTY

Spencer—H. Metzger, Metzger Bros. 4 15

SANDUSKY COUNTY

Washington—Ed Becker, Johnston Neiset & Co. 1 ..... abd

MERCER COUNTY

Marion—Ben Greishof, Chickasaw Oil 1 4
Washington—John Lilmarger, Recovery Oil & Gas 1 ..... gas

Wells completed 2
Production 4
Gas 1

SENECA COUNTY

Liberty—R. Nightswander, Banks & Co. 1 ..... gas
L. Scherger, W. E. Richards & Co. 3. dry
Jackson—H. L. Smith, A. R. Smith 16. 20

Wells completed 3
Production 20
Dry 1
Gas 1

LUCAS COUNTY

Springfield — Henry Gruenke, Edward Oronske 1 ..... dry

HARDIN COUNTY

Jackson—Frank McKinley, Kurtz Gas & Co. 2 ..... dry

DARKE COUNTY

Mississinewa—W. C. Disher, Cole Oil & Gas 20 8

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	2	2	1	0	0	2	2
Crawford	1	2	0	0	1	6	7
Lawrence	2	0	2	0	0	2	2
Wabash	3	0	3	0	1	0	1
St. Clair	2	12	1	0	0	0	0
Saline	1	80	0	0	0	4	4
Total Jan.	11	96	7	0	2	14	16
Total Feb.	16	511	5	1	3	12	15
Difference	5	415	2	1	1	2	1

WELLS COMPLETED
CLARK COUNTY

Casey—M. Miller, Bohannon & Co. 1 ... dry
Johnson—R. E. Deverick, W. C. McBride Inc. 3 2

Wells completed 2
Production 2
Dry 1

CRAWFORD COUNTY

Martin—Martha E. Thomas, Ohio Oil 6 2

LAWRENCE COUNTY

Dennison—Geo. Gray No. 2, Ohio Oil 13 dry
J. J. DesBaeuf, Phipps, Blosser & Co. 1 ..... dry

Wells completed 2
Dry 2

WABASH COUNTY

Wabash—L. G. Stillwell, J. S. Young, Jr. & Co. 2 ..... dry
Jos. Keyser, J. S. Young Jr. & Co. 10. dry
Clyde King, Phipps, Blosser & Co. 1. dry

Wells completed 3
Dry 3

ST. CLAIR COUNTY

Sugar Loaf—M. E. Thomas, Ohio Oil 1.. dry
NW Survey No. 429, Petty & Olenburg 1 12

Wells completed 2
Production 12
Dry 1

MARION COUNTY

Centralia — Bronson Talbot, Webster Drilling 1 ..... abd

SALINE COUNTY

Harrisburg—Smith, Unknown 1 80

INDIANA FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Adams	0	0	0	0	0	1	1
Gibson	2	0	1	1	0	4	4
Daviess	0	0	0	0	0	2	2
Vigo	0	0	0	0	0	1	1
Sullivan	0	0	0	0	1	3	4
Spencer	1	5	0	0	1	7	8
Dubois	0	0	0	0	0	2	2
Warrick	0	0	0	0	0	2	2
Knox	0	0	0	0	0	1	1
Benton	0	0	0	0	0	1	1
Fountain	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	1	1
Montgomery	0	0	0	0	0	1	1
Wabash	0	0	0	0	0	1	1
Greene	0	0	0	0	0	3	3
Henry	1	0	0	1	0	0	0
Crawford	0	0	0	0	0	1	1
Perry	0	0	0	0	1	1	2
Posey	0	0	0	0	0	1	1
Vandeburg	0	0	0	0	0	1	1
Lagrange	0	0	0	0	0	1	1
Hancock	0	0	0	0	0	1	1
Total Feb.	4	5	1	2	3	37	40
Total Jan.	12	121	4	2	3	42	45
Difference	8	116	3	0	0	5	5

WELLS COMPLETED
GIBSON COUNTY

Washington—P. R. Lindy, Fred Hillis 1 dry
Columbia—Ralph Onyett, Roxana Pet. 1 gas

Wells completed 2
Dry 1
Gas 1

SPENCER COUNTY

Troy—A. C. Grass, Packard Oil 1 5

HENRY COUNTY

Knightstown—Kahn, Knightstown Gas 1 gas

MICHIGAN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Muskegon	31	5,670	12	1	86	40	126
Isabelle	1	150	0	0	3	2	5
Midland	0	0	0	0	0	4	4
Kent	1	0	1	0	2	2	4
Ottawa	0	0	0	0	0	4	4
Mason	1	92	0	0	0	2	2
Newaygo	0	0	0	0	2	2	4
Oceana	1	0	1	0	4	3	7
Livingston	0	0	0	0	0	2	2
Van Buren	0	0	0	0	2	1	3
Shiawassee	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	1	1
Montcalm	0	0	0	0	1	0	1
Sanilac	0	0	0	0	0	1	1
Alpena	0	0	0	0	0	1	1
Allegan	0	0	0	0	1	0	1
Tuscola	0	0	0	0	0	1	1
Huron	0	0	0	0	0	1	1
Cass	0	0	0	0	0	1	1
Mecosta	0	0	0	0	0	1	1
Lake	0	0	0	0	0	1	1
Total Feb.	35	5,912	14	1	101	71	172
Total Jan.	37	6,630	15	7	72	79	151
Difference	2	718	1	6	29	8	21

MUSKEGON COUNTY
WELLS COMPLETED

Muskegon—Shanks Bros., Wolfe Oil 1.. dry
Chas. Barr, Swastika Oil & Gas 1 ... dry
Torrent, Reed Oil 2 300
Bishop, Puritan Oil 1 ..... dry
M. Figge, Lima Oil Corp. 4 ..... gas
Haight, Lima Oil Corp. 3 ..... dry
Fee, Continental Motors Corp. 6 100
Fee, Continental Motors Corp. 8 15
Frank Cihak, Muskegon-Great Lakes Oil 1 25
County Sanitorium, Balch Bros. & McIntosh 2 400
Cecil F. Warren, Great Western Oil & Gas 1 ..... dry
Edward C. Boyce, Estes & Scott 1 ... dry
Joldersman, Central Oil & Gas 2 50
Chas. I. Giles, Wright Oil 2 1000
Giles, Johnson Oil & Ref. 1 300
F. Zelznich, M. P. Marston & Co. 1 .. dry
M. Trierweiler, Lilyseu Oil 1 ..... dry
Jager, Muskegon-Great Lakes Oil 1.. 30
Myler, Muskegon Development 2 100
Cook, J. V. Howard 1 50
Orr, Gillette & Beebe 1 100
Laketon—Harold Ford, W. D. McMillan & Co. 1 ..... dry
F. J. Giles, Nelson & Witt 1 350
Brand, Betty Jane Syndicate 1 600
G. Seboltz, Paragon Oil 1 1000
D. J. Gates, Ohio Oil 1 500
L. Young, Reed Oil 4 600
Carl Damm, Carl Damm 1 ..... dry
A. Grotefeld, Johnson Oil & Ref. 1 ... 150
Cedar Creek—Fee, Shifting Sands Oil Synd. 1 ..... dry
Dalton—Grelewicz, Sun Oil 1 ..... dry

Wells completed 31
Production 5670
Dry 12
Gas 1

KENT COUNTY

Courtland—Edward Gould, Kenyon Oil 1 ..... dry

ISABELLE COUNTY

Chippewa-Coon, F. W. Stark, trustee, 1. 150

MASON COUNTY

Logan—L. N. Lake, Taggart Bros. & Welch 1 92

OCEANA COUNTY

Golden—Mrs. Carrie Mears, Ed DuVal 2 dry

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Will pay the usual monthly dividend of 1½% on its $1.00 par Preferred shares on March 30. This is dividend No. 102 and makes a total of 173½% paid to Preferred shareholders. Also the usual monthly dividend of 18 cents a share will be paid on its Class A Preferred shares on March 30.
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TEXAS OIL MAPS
County and District Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for January

Runs

Company—	Month (bbls.)	Dly av. (bbls.)
Prairie P. L. Co.*	4,743,000	153,000
Gulf P. L. Co.	1,297,206	41,845
Texas P. L. Co.	1,117,612	36,052
Magnolia P. L. Co.	2,214,105	71,423
Empire P. L. Co.	1,574,458	50,789
Cosden P. L. Co.	930,392	30,013
Sinclair P. L. Co.	3,527,490	113,790
Oklahoma P. L. Co.	3,489,691	112,570
Other lines*	6,386,000	206,000
Total January	25,279,954	815,482
Total December	25,415,487	819,853
Difference	135,533	4,371

Shipments

Prairie P. L. Co.†	5,914,555	190,792
Gulf P. L. Co.	1,659,830	53,543
Texas P. L. Co.	1,119,561	36,115
Magnolia Pet. Co.	2,139,066	69,002
Empire P. L. Co.	1,385,602	44,697
Cosden P. L. Co.	867,996	28,000
Sinclair P. L. Co.†	3,232,513	104,275
Oklahoma P. L. Co.	3,479,773	112,251
Other lines*	6,448,000	208,000
Total January	26,246,896	846,675
Total December	26,406,200	851,814
Difference	159,304	5,139

Stocks

Prairie O. & G. Co.*	35,044,000
Gulf P. L. and Gypsy Oil Cos.	9,504,353
The Texas Company	8,189,858
Magnolia Pet. Co.	9,548,097
Empire P. L. Co.	4,295,709
Mid-Continent Pet. Corp.	3,687,321
Sinclair Crude Oil Pur. Co.*	20,709,000
Carter Oil Co.	12,428,302
Oklahoma P. L. Co.	3,176,409
Other lines*	11,700,000
Total January	118,283,049
Total December	116,940,815
Difference	1,342,234

*Estimated. †Prairie Pipe Line and Sinclair Pipe Line shipments include Texas crude oil.

Note—Stocks do not include approximately 7,700,000 bbls. of crude oil held in storage on private tank farms and leases.

EASTERN PIPE LINE REPORT

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio Kentucky and Indiana for December and January:

	Dec., 1928	Jan., 1929
Nat. Transit	145,961.90	136,672.42
S. W. Pa. P. L.	90,632.07	99,615.87
Eureka P. L.	334,400.38	352,729.30
Buckeye P. L. (Macksb'g)	321,746.10	330,659.13
Buckeye P. L. (Cleve)	11,670.01	11,137.67
Buckeye P. L. (Lima etc.)	102,544.02	90,382.06
Indiana P. L.	5,869.25	4,133.22
Cum'land P. L.	198,838.68	195,655.99
N. Y. Transit	26,551.67	26,987.20
Tidewater P. L.	222,437.71	201,809.34
Pure Oil	58,931.42	63,975.76
Emery P. L.	62,842.83	64,263.32
Paragon Dev.	21,324.31	17,882.64
Stoll Oil Ref.	9,023.98	8,337.71
Total	1,612,774.33	1,604,241.63
Daily average	52,024.98	51,749.73

Note—Indian Refining Co. also reported other receipts of 341,102.36 bbls. Paragon Refining Co. had other receipts of 188,-650.77 bbls. Paragon Development had other receipts of 373.72 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, and Kentucky for December and January:

	Dec., 1928	Jan., 1929
Nat. Transit	565,441.11	572,124.61
S. W. Pa. P. L.	472,797.78	438,318.41
Eureka P. L.	218,228.06	223,981.34
Buckeye P. L. (Macksb'g)	163,839.57	193,196.90
Buckeye P. L. (Cleve)	2,189.40	2,667.94
Buckeye P. L. (Lima, etc.)	1,389,409.84	1,292,954.24
Indiana P. L.	1,426,008.91	1,426,599.14
Cum'land P. L.	215,190.79	175,926.75
Southern P. L.	39,859.78	.....
N. Y. Transit	189,477.21	188,973.27
Northern P. L.	173,738.49	131,681.47
Tidewater P. L.	184,601.11	164,335.93
Pure Oil	62,743.21	60,320.01
Emery P. L.	60,747.88	58,403.16
Paragon Ref.	195,558.59	188,650.77
Paragon Dev.	21,911.78	19,225.73
Total	5,381,733.51	5,137,359.67
Daily average	173,572.05	165,721.28

Indian Refining Co. reported other deliveries of 315,028.81 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana, and Kentucky at the close of December and January:

	Dec., 1928	Jan., 1929
Nat. Transit	863,001.46	812,449.58
S. W. Pa. P. L.	429,283.61	405,706.51
Eureka P. L.	1,166,151.69	1,186,389.53
Buckeye P. L. (Macksb'g)	558,828.02	539,030.90
Buckeye P. L. (Cleve)	33,233.02	58,406.82
Buckeye P. L. (Lima, etc.)	2,326,759.46	2,223,198.38
Indiana P. L.	503,036.50	520,629.71
Cum'land P. L.	504,540.79	527,107.30
Southern P. L.	380,167.89	531,254.68
N. Y. Transit	307,858.74	265,636.20
Northern P. L.	367,732.48	389,492.68
Pure Oil	11,641.89	16,499.34
Emery P. L.	13,422.06	19,132.04
Paragon Ref.	21,092.45	21,287.75
Indian Ref.	46,060.23	74,153.69
Paragon Dev.	6,754.88	6,187.72
Total	7,539,555.17	7,596,563.63
Decrease	826,998.21	.....
Increase	.....	57,008.46

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of December and January showing the gross stocks of the above fields:

	Dec., 1928	Jan., 1929
Pennsylvania	2,927,805.85	2,988,208.30
Lima	734,379.46	696,840.58
Kentucky	722,193.76	755,304.30
Mid-Continent	3,118,706.55	3,070,290.16
Illinois	36,469.55	85,920.29
Total	7,539,555.17	7,596,563.63

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1926	1927	1928	1929
Jan.	55,630	56,209	52,904	51,749
Feb.	60,394	61,298	57,002	.....
Mar.	61,644	63,247	57,485	.....
April	63,019	60,927	56,812	.....
May	60,580	60,284	62,067	.....
June	61,121	62,757	58,230	.....
July	63,206	58,674	57,144	.....
Aug.	61,815	60,870	57,745	.....
Sept.	64,639	60,285	53,487	.....
Oct.	161,132	147,080	58,100	.....
Nov.	67,774	57,275	53,565	.....
Dec.	58,755	53,980	52,025	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1926	1927	1928	1929
Jan.	156,056	141,227	146,465	165,721
Feb.	159,488	138,534	167,368	.....
Mar.	150,239	133,777	158,883	.....
April	152,374	140,227	172,935	.....
May	160,998	144,594	180,559	.....
June	160,257	149,772	188,024	.....
July	160,045	151,850	189,470	.....
Aug.	151,929	158,653	192,853	.....
Sept.	158,915	144,213	194,138	.....
Oct.	161,132	147,036	176,000	.....
Nov.	172,608	150,975	176,898	.....
Dec.	136,428	144,504	173,572	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1927	1928	1929
Jan.	9,718,008	12,276,710	7,596,563
Feb.	10,119,162	12,180,419	.....
Mar.	10,794,044	12,239,725	.....
April	11,112,295	11,740,125	.....
May	11,359,381	11,602,468	.....
June	11,493,673	11,287,678	.....
July	11,458,128	10,819,331	.....
Aug.	11,989,115	10,236,743	.....
Sept.	12,212,716	9,660,910	.....
Oct.	12,047,661	9,229,709	.....
Nov.	11,939,740	8,366,553	.....
Dec.	12,340,297	7,539,555	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

	Runs	Shipments	Stocks
1928—			
Feb.	2,460.14	3,109.34	21,176.79
March	2,578.86	3,540.33	20,209.21
June	3,153.08	2,779.02	17,982.68
July	2,902.50	3,628.02	17,197.96
Aug.	2,874.11	2,350.13	17,721.64
Sept.	2,820.31	5,255.42	15,285.91
Oct.	1,289.93	538.89	17,551.93
Nov.	2,663.53	788.47	19,426.99
Dec.	3,053.60	3,167.53	19,426.99
1929—			
Jan.	2,099.90	.....	19,313.04

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Feb. 1	2,261,171.20
Runs from wells	545,715.63
Other receipts	302,945.18
Regular deliveries	481,317.04
Other deliveries	442,034.81

The amount of Illinois oil run by the Tidewater Pipe Co. in January was 35,011.96 bbls. Deliveries were 63,767.02 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1928—	Runs	Deliveries
February	573,619.78	450,217.81
March	725,250.82	520,595.60
April	526,013.13	448,282.64
May	632,968.64	522,980.51
June	608,552.49	625,087.31
July	612,286.49	565,678.97
August	639,074.85	671,864.61
September	570,307.91	737,282.80
October	626,147.64	626,280.48
November	576,332.88	702,559.93
December	584,633.00	491,517.36
1929—		
January	570,727.38	545,084.04

Tidewater Pipe Co., Ltd., also delivered in January, 194,517.25 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
August	18,161	3,613	27,774	17,677	2,419	69,645	.....	.....	.....	.....	806	70,451
September	11,100	.....	18,967	35,200	6,700	74,967	.....	.....	.....	.....	.....	74,967
October	17,323	.....	11,807	6,483	.....	.....	.....	.....	.....	.....	.....	35,613
November	31,333	5,200	25,400	18,200	7,100	77,233	.....	.....	.....	.....	1,000	78,233
December	4,968	2,968	24,678	18,806	3,064	54,484	.....	.....	.....	.....	2,419	56,903
January	15,838	.....	16,676	11,838	7,938	52,290	.....	.....	.....	.....	5,161	57,451

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
August	25,290	16,323	123,326	21,613	7,194	193,645	.....	38,677	.....	613	39,290	232,935
September	22,933	19,100	110,467	30,700	14,333	197,533	6,367	41,300	6,333	1,667	55,667	253,200
October	20,161	16,839	128,453	37,710	7,096	200,258	.....	32,226	3,065	1,613	36,903	237,161
November	18,400	16,033	133,700	30,367	5,433	206,933	1,333	37,167	4,633	.....	43,133	249,966
December	15,419	15,968	140,871	42,323	8,709	223,290	2,903	36,129	2,355	.....	40,387	263,677
January	11,936	8,903	130,065	34,871	15,709	201,484	.....	34,803	4,093	1,287	40,193	241,677

GROSS PRODUCTION IN UNITED STATES FOR 12 MONTHS (Revised)

(In barrels of 42 gallons)

1928—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
February:	Month	18,038,459	19,294,426	19,678,396	3,079,887	2,571,575	1,734,207	2,230,887	3,166,000	69,794,837
	Daily average	622,016	665,324	678,565	106,203	88,675	59,800	76,927	109,172	2,406,694
March:	Month	19,118,324	20,162,524	21,542,865	3,379,031	2,687,948	1,866,106	2,401,911	3,522,000	74,680,709
	Daily average	616,720	650,404	694,921	109,001	86,708	60,197	77,481	113,613	2,408,065
April:	Month	18,309,729	19,096,320	21,276,913	3,412,260	2,472,600	1,912,187	2,370,810	3,231,000	73,481,819
	Daily average	609,357	636,544	739,230	113,742	82,420	63,740	79,027	107,700	2,451,794
May:	Month	19,331,866	19,443,355	21,230,046	3,367,809	2,843,847	1,926,026	2,525,043	3,619,000	74,376,992
	Daily average	623,609	627,205	684,518	108,639	91,737	62,130	81,447	116,742	2,398,883
June:	Month	19,164,244	18,482,981	19,877,936	3,202,050	3,075,911	2,074,422	2,425,470	3,401,000	71,704,014
	Daily average	638,808	616,099	662,598	106,735	102,530	69,147	80,849	113,367	2,390,134
July:	Month	19,754,458	18,809,138	22,055,727	3,171,548	2,792,139	2,238,090	2,492,586	3,487,000	74,800,746
	Daily average	637,241	606,748	711,475	102,308	90,069	72,131	80,406	112,484	2,413,567
August:	Month	19,444,899	20,840,804	22,339,131	3,147,058	2,711,787	1,959,264	2,561,840	3,556,000	76,560,783
	Daily average	627,255	672,284	720,448	101,518	87,477	64,170	82,640	114,709	2,470,670
September:	Month	18,908,169	22,456,860	21,554,269	3,047,250	2,540,070	1,830,225	2,432,430	3,229,000	76,998,373
	Daily average	630,272	748,562	718,207	101,575	84,669	61,007	81,047	104,300	2,566,279
October:	Month	19,430,992	23,431,071	22,176,853	3,058,460	2,652,484	1,836,221	2,571,822	3,612,000	78,769,903
	Daily average	626,806	755,841	715,376	98,660	85,564	59,233	82,962	116,516	2,540,964
November:	Month	19,907,526	22,075,680	20,791,798	2,977,800	2,476,080	1,802,314	2,388,870	3,348,000	75,770,068
	Daily average	663,584	735,856	693,059	99,260	82,536	60,064	79,629	111,600	2,525,669
December:	Month	21,574,703	22,425,722	22,180,102	2,958,400	2,521,571	1,846,441	2,289,040	3,581,000	79,407,979
	Daily average	695,958	723,410	715,487	96,400	81,341	59,576	73,840	115,516	2,561,550
1929—										
January:	Month	23,385,939	22,417,030	23,412,192	2,861,641	2,453,526	1,907,887	2,076,070	3,379,000	81,793,235
	Daily average	754,385	723,130	755,232	92,311	79,146	58,518	66,970	109,000	2,638,491
	Total 12 months	236,340,308	248,939,561	258,706,238	37,693,194	31,799,538	22,863,350	28,766,779	41,131,000	906,240,968
	Daily average	645,739	680,163	706,848	102,987	86,884	62,468	78,598	112,380	2,476,066

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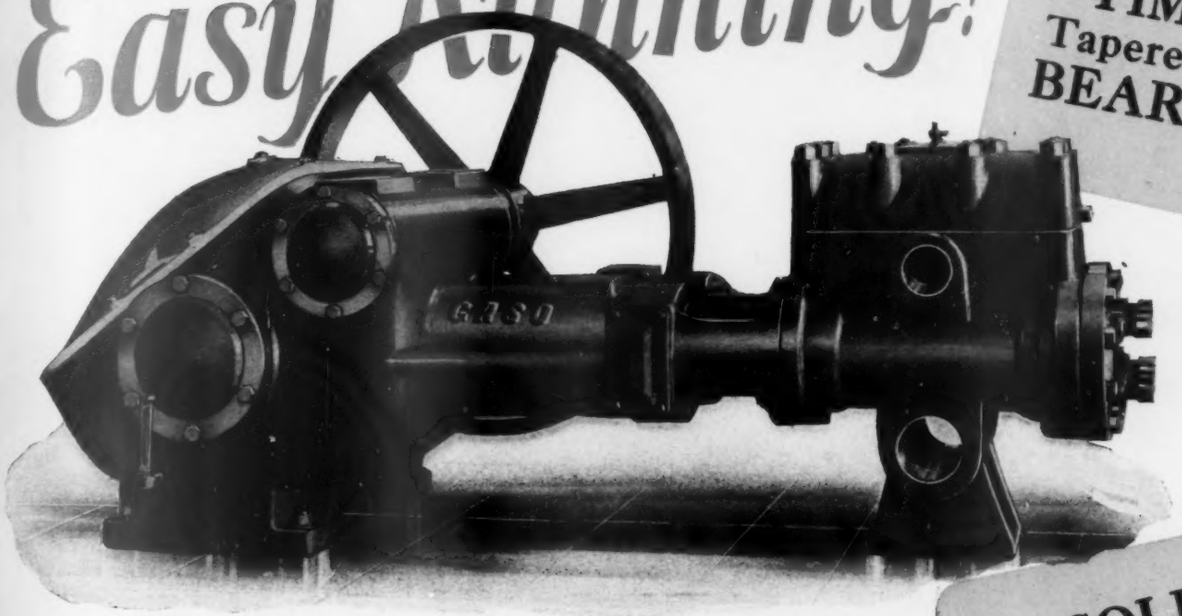

Figure 1508

TIMKEN Tapered Roller BEARINGS

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Gaso Pump, Figure 1508, designed for pressures ranging from 250 to 800 pounds, is arranged for any type of drive—(1) pulley for belt drive, (2) direct connected to engine through flexible coupling, (3) motor, through silent chain or reduction gears, and (4) "V" rope drive. Investigate by letter, wire or phone.

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The cutting blades on the Hughes Soft Formation Cutter Head are set with "HUGHESITE", an alloy having a hardness approaching that of a diamond. This feature insures greater speed in making hole and more hole per Cutter Head.

The men in the picture are: T. B. TEAFATILLER, C. T. ASBURY, JESS CROSS, W. H. BATES, and J. A. HOWARD.

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